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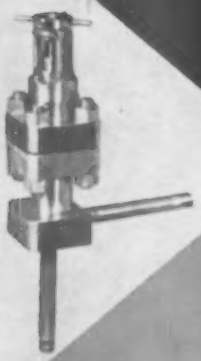
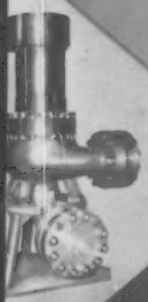
NUCLEONICS

ATOMIC POWER • NUCLEAR ENGINEERING • APPLIED RADIATION





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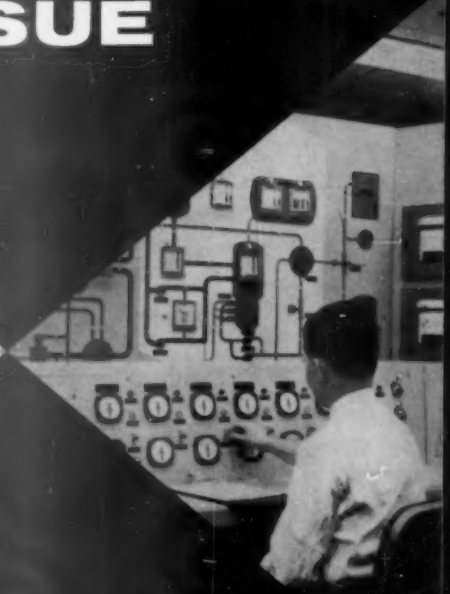

What's New and Nuclear?

A ten-page rundown on interesting new wares offered by suppliers to the nuclear industry

...p. 212

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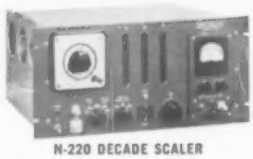

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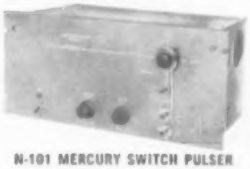

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Range 10 to 50,000 cps. Nine ranges from 0 to 5,000. Decade scale of 10, 1 microsecond resolution, extends range 1 complete decade. Output available for 10 MV recorder. Adjustable time constant from 0.5 to 80 seconds.

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NUCLEONICS

ATOMIC ENERGY
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APPLIED RADIATION

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About NUCLEONICS

Not So Special

The growing role that private industry is playing in the supply of the stuff of atomic energy—those "special nuclear materials," as the Atomic Energy Act of 1954 styles them—is best attested by the growing number of concerns that will convert UF_6 into uranium metal, oxides and compounds of all kinds, or recover uranium in scrap resulting from such conversion, or—and this is by now an old story—fabricate fuel elements. A complete tabulation of the first and last groups was given in our report on nuclear fuels in our August issue.

The passage of time will surely see further private participation in those fields where the government remains sole supplier: enriched and depleted uranium in the form of uranium hexafluoride, heavy water in quantities of 125 pounds or more, uranium-233 and plutonium, certain analytical standards and other materials not commercially available, and the reprocessing of spent reactor fuel.

To give you a better feeling for how industry is carrying out its job we present two stories on how Mallinckrodt converts UF_6 to the oxide (p. 126) and how G. E. takes *that* product and makes fuel pellets for the Dresden reactor (p. 128). The editor-art-director team that made the articles come alive as pictorialized flowsheets hopes their efforts will not be lost upon you.

Continuing Responsibilities

We feel a continuing responsibility to report fully and completely to you whenever there is a nuclear accident of more than minor significance. The basis for this policy was first laid when we editorialized that "Nuclear Accidents are Everybody's Business" in May, 1956. Its first significant implementation came the very next month when we carried a letter by W. H. Zinn, then Director of Argonne National Laboratory, detailing the circumstances surrounding the EBR-1 fuel meltdown, which had been kept secret for four months after it occurred. A more formal implementation of our accident-reporting policy came in December, 1957, when we carried portions of the official reports on the Windscale and M. W. Kellogg incidents.

This month we again fulfill our responsibility to the nuclear community by presenting (p. 138) another accident report—this one on the criticality incident at Oak Ridge, June 16, 1958.

The Buyers' Guide

Ion-exchange resins, mechanical seals, pH controls, ultrasonic equipment, pulse-height analyzers, thermonuclear equipment, insurance services—these are just some of the 650 categories of products, materials and services that are listed in the 1958–1959 Buyers' Guide that forms part of this issue. The broad variety of products listed reflects the complex needs and broad scope of our nuclear industry. It's educational just to leaf through and reflect on that complexity and scope, but the Guide is intended for more than education. It's a workaday tool, for locating vendors of equipment and services you need for your work. The information contained is based on replies to questionnaires mailed to nearly 2,000 suppliers. We hope you find it useful.

Islands of Darkness

Perhaps you've noticed how some small islands of technique tend to be less well understood by workers in a particular field than they ought to be. The power-station designer may not feel at home with Laplace transforms . . . and there are aspects of field theory that have probably gone unassimilated even by the brightest grad student.

One island of darkness we had noticed was that many users of pulse-height analyzers were confused by the effects of pulse shape. Along came Bob Chase of Brookhaven's Instrumentation Department with a tutorial article that cleared up matters very nicely. At least it made our editors feel that they understood the subject better than ever before (too late though to have any effect on that experiment long since abandoned for an editorial career). For you for whom it is not too late the page number is 116.

—*The Editors*

Coming Features in NUCLEONICS

Next Month

Critical Facilities—A 16-page Report
Gamma-Ray Spectroscopy with Plastic Scintillators
Well Logging—A Review

Later Months

Army Reactor Program
Fission Counters as Reactor Monitors
Heat-Balance Flowmeter

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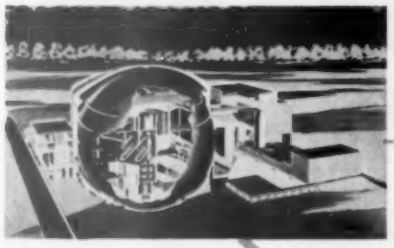
STATIONARY STEAM GENERATING SYSTEMS



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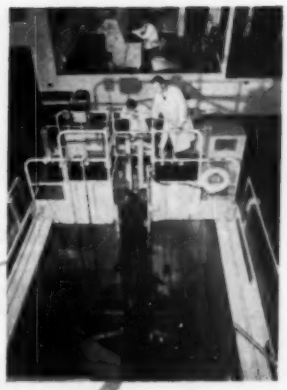

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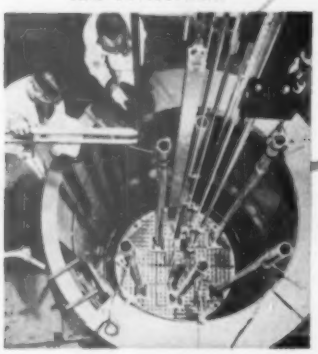

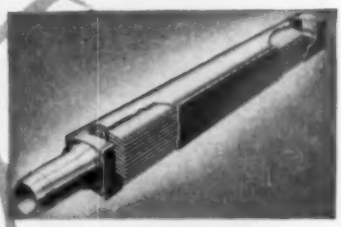

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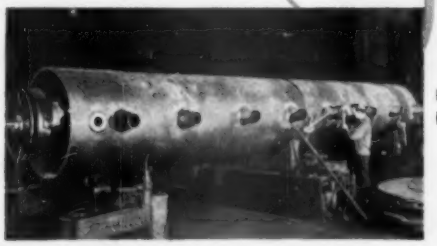

HEAVY COMPONENTS

Some Of The Major Areas In Which B&W Is Contributing To Nuclear Reactor Development

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A skilled staff of scientists and engineers, specialized production facilities, programs of research for nuclear applications, together with long experience in controlling heat and pressure for productive purposes, have combined to establish B&W's position of leadership in putting the atom to useful work.

B&W recognizes that the development of nuclear power challenges industry with unprecedented, complex problems and is contributing to their solution—and to the Free World's progress and strength. The Babcock & Wilcox Company, Atomic Energy Division, 161 East 42nd Street, New York 17, New York.

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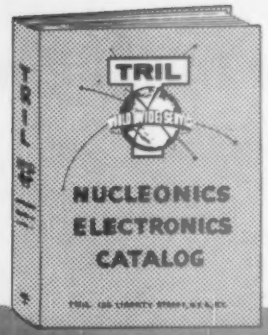

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Looking for a fast-moving, on-its-toes "team" to assist you on special metals applications? Mallory-Sharon, largest integrated special metals producer, offers you just such a team. Within one organization, we control production from raw materials to finished mill products. Our entire experience and facilities, backed by a strong Service Engineering group, are devoted to special metals research and application.

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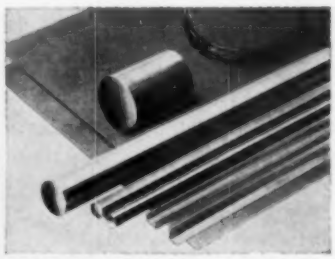

Mill Products—*Both titanium and zirconium are available from Mallory-Sharon in sheet, strip, rod, bar, plate and other shapes. All are closely quality-controlled as to mechanical properties and chemical composition.*

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Thorium . . . a Superior Fertile Material

Now used more and more in nuclear power plants

a report by LINDSAY

There are good reasons for the increasing attention being given to thorium as a fertile material for nuclear power plants. Most important, U^{233} has a higher η than either U^{235} or Pu for neutrons of thermal energies and just above. Of all the thermal fuel cycles, that using thorium and U^{233} offers by far the best possibility of breeding, or at least achieving high conversion ratios. Obviously, the amount of excess reactivity required for a given fuel lifetime decreases and fuel costs become much lower as the conversion ratio approaches 1.0.

Another factor not often mentioned, but quite important, is that as the conversion ratio approaches unity, the distribution of power in the core becomes more constant throughout the life of the reactor. Therefore, it may be practical to design a core to operate at maximum power, by orificing each cooling channel for maximum power level at the start of a core life, without fear of a subsequent shift in the max/ave heat flux as fuel is consumed near the center of the reactor.

THORIUM ADVANTAGES

Thorium's physical properties also give it an advantage over uranium. First, the metal can withstand much higher temperatures than uranium metal since there is no crystalline transition at moderate temperatures. Then, too, thorium has a somewhat higher thermal conductivity than uranium, so that on two counts, it can experience a higher heat flux. Furthermore, experiments to date indicate that thorium-based fuels are considerably more resistant to radiation damage than their uranium metal counterparts. Although uranium fuels are much more fully developed than thorium-uranium fuels, three domestic experimental reactors are experimenting with the thorium base fuel, and four full scale reactors are either using or planning to use the thorium-uranium cycle.

The major problem confronting Th-U^{233} enthusiasts is the fact that the uranium produced is contaminated with U^{232}, which decays on a 74 year half life to Th^{228}, which in turn decays on a 1.9 year half life to a long chain of short half life daughters, some of which emit extremely hard gammas. Thus, both fuel and fertile material are contaminated, making recycling a bit more complex than it would otherwise be.

The fertile material, in order to be recycled, would have to either be stored for a long cooling off period, or remotely fabricated. The fuel would have to be fabricated very shortly after processing to remove any Th^{228} which may have built up, or it would have to be remotely fabricated too. And since most elements use a mixture of fuel and fertile material, if either required remote fabrication, both would. In any event, it seems that shipping and subsequent handling of the fuel would have to be by remote means, since Th^{228} would continue to be produced as the result of U^{232} decay.

Although the Th-U^{233} cycle has most attractive nuclear and metallurgical properties, the cycle's fuel fabrication costs per element appear to be inherently more expensive than for other cycles. However, we are hopeful that this higher cost of fabrication will prove to be of small consequence when considered in light of increased fuel element and core lifetime, higher permissible specific power levels, and superior neutron economy.

PLUTONIUM PREMIUM

Until now, there has been considerable emphasis throughout most of the world upon the by-product production of plutonium from power reactors. Naturally we have been eagerly looking forward to the day when there would be no premium placed upon plutonium production. Now we seem to be approaching a situation in which truly peaceful application of nuclear power is feasible so that at last the thorium-uranium cycle should receive the consideration it deserves on its technical merits.

Lindsay is the world's largest producer of thorium materials. Much of its current production is for the atomic energy industry. Raw material supply and production facilities are such that we have ample capacity to handle demand for thorium in the foreseeable future. We welcome discussion with qualified personnel of problems bearing upon the use of thorium as a fertile material in nuclear power.

PLEASE ADDRESS INQUIRIES TO

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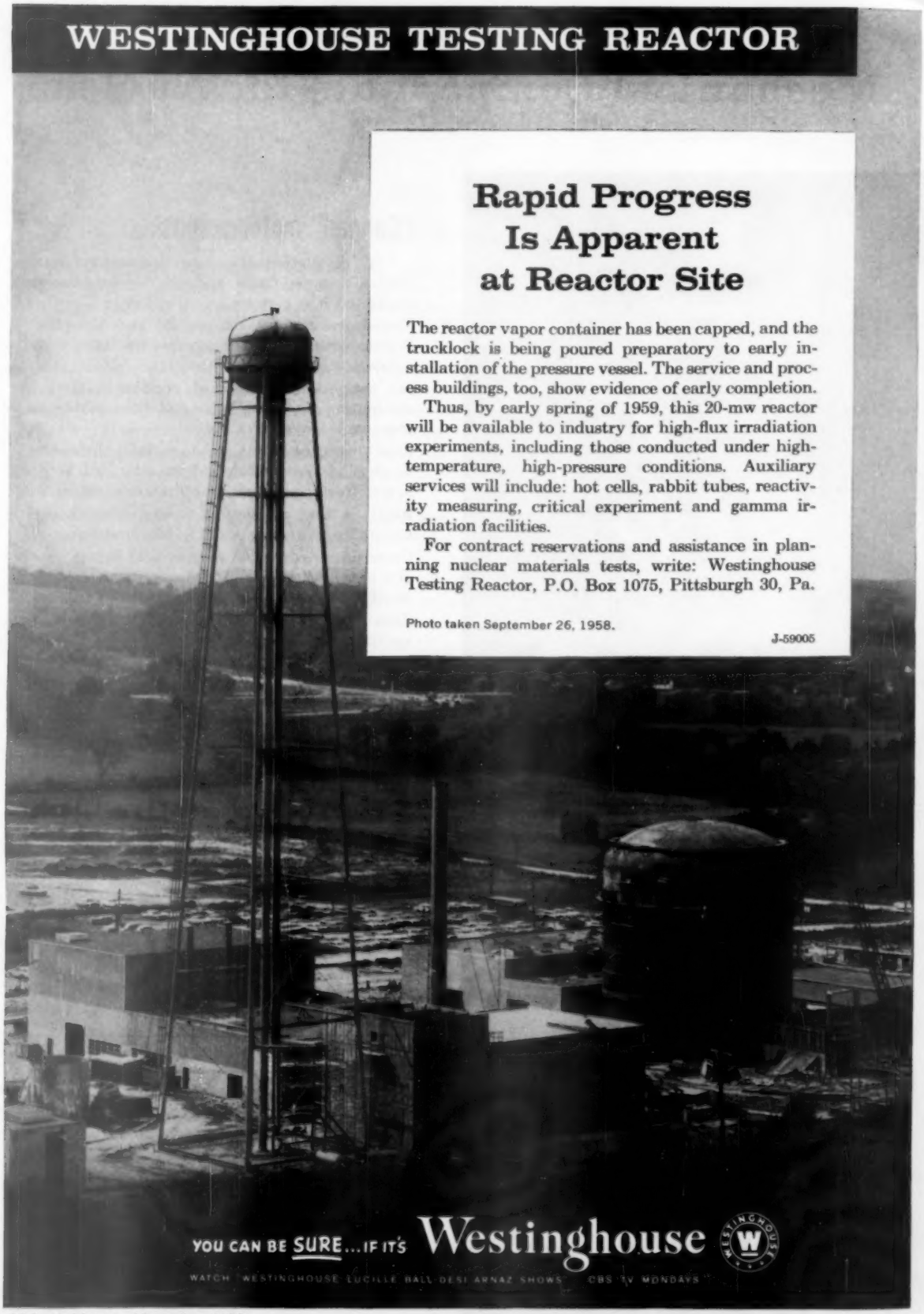
WESTINGHOUSE TESTING REACTOR



Rapid Progress Is Apparent at Reactor Site

The reactor vapor container has been capped, and the trucklock is being poured preparatory to early installation of the pressure vessel. The service and process buildings, too, show evidence of early completion.

Thus, by early spring of 1959, this 20-mw reactor will be available to industry for high-flux irradiation experiments, including those conducted under high-temperature, high-pressure conditions. Auxiliary services will include: hot cells, rabbit tubes, reactivity measuring, critical experiment and gamma irradiation facilities.

For contract reservations and assistance in planning nuclear materials tests, write: Westinghouse Testing Reactor, P.O. Box 1075, Pittsburgh 30, Pa.

Photo taken September 26, 1958.

J-59005

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Wide Temperature Range — to 1600°F.
Wide Pressure Range — to 10,000 psia.

Use of these pumps for thousands of hours in regular plant operations has proven their dependability and advantages.

Two-in-one pump-valve unit...

This new Westinghouse development, available as optional equipment, features a center-guided check valve integral with the suction nozzle of the canned motor-pump casing.

This space-saving two-in-one unit is more economical to buy, install and maintain, as it eliminates an additional pressure vessel and piping system opening.

Design features include:

Valve slamming and hydraulic hammer eliminated by the dash-pot control orifice;

Optimum thermosyphoning available through spring loading on center guide;

Improved pump efficiency through elimination of intake turbulence with tear-drop shroud design.

Valve capacities and alloy construction match the pumps on which they are installed.

Motor-pumps and the valves are also available separately. When installed separately, valves can be placed in either horizontal or vertical positions.

Reactors from Westinghouse

"Canned" control rod drive mechanisms...

This magnetic jack type control rod drive mechanism is designed for use in high pressure, high temperature water reactors. It employs the magnetic brake and solenoid principle to produce linear motion within the sealed system, and, as such, provides the most reliable and safest operation available.

Important advantages offered by this new unit are:

Zero leakage — attained through canned construction which keeps all moving parts within a pressure boundary. No auxiliary equipment is necessary for seal leakage or buffer seal fluid injection.

Low maintenance — there are no radioactive shaft seals to maintain. Electric coils can be removed and replaced without breaking the hermetic seal.

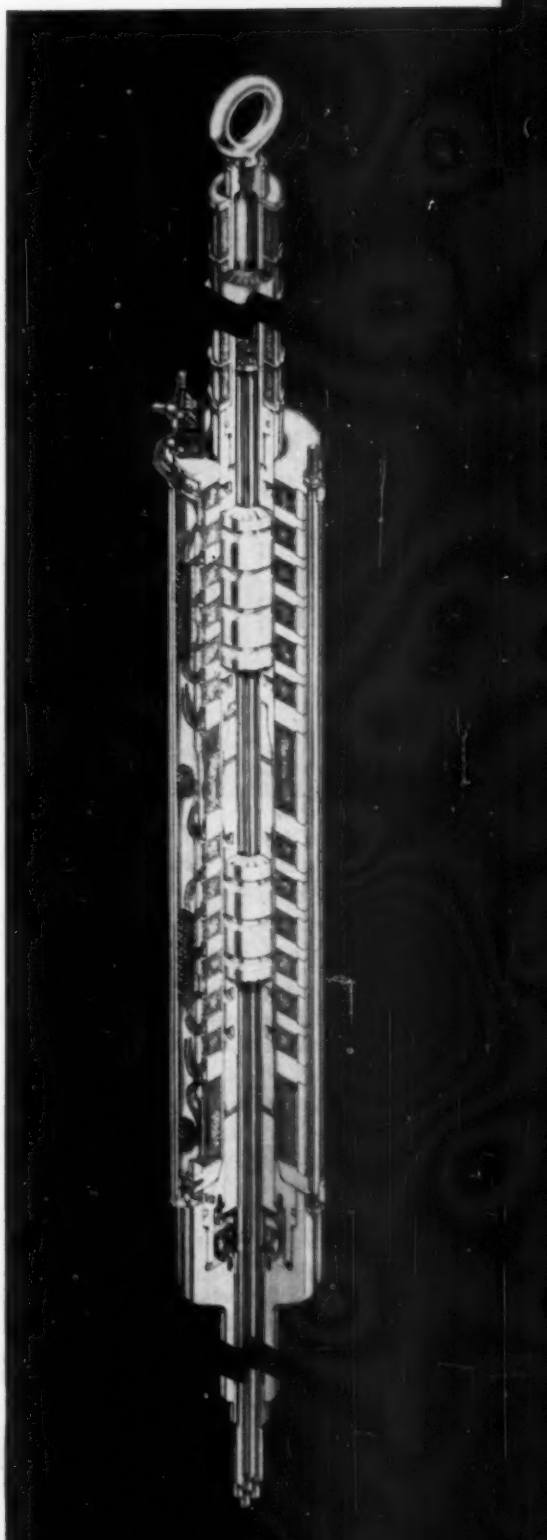
Maximum scram reliability — no mechanical drive mechanism, no latches, no locks interfere with gravity actuation of scram disconnect and the control rod.

Maximum control reliability — too fast rod withdrawal is impossible with digital, step and repeat type of mechanism. An overspeed command signal to lifting magnets cannot be followed by the magnetic jack mechanism.

Long life assurance — inherent in magnetic jack which has low unit loadings and does not require close fitting parts. Proven time and again in thousands of excursions and many miles of total travel, almost no wear has been encountered in frequent inspections.

No water cooling required.
Operates at 2000 psi, 600°F.

The magnetic jack system is designed to operate with step increments of approximately ½ inch to produce withdrawal or insertion rates up to 11 inches per minute. "Fail-safe" scram is assured by the fact that the gripper must be continuously excited to hold control rod in withdrawn position.



Westinghouse coolant control equipment:

Canned motor-pumps
for water, slurry and liquid metal reactors;
Hermetically sealed blowers for gas cooled reactors;
Main stop gate valves — hydraulic or electric drive;
Check valves — center-guided or swing type;
plus
Canned control rod drive mechanisms (magnetic jack type).

Westinghouse leadership in all phases of atomic power gives you an unparalleled source of fully qualified products and advanced engineering assistance.

Call your local Westinghouse sales engineer or write: Westinghouse Electric Corporation, Atomic Equipment Department, P.O. Box 217, Cheswick, Pennsylvania. J-57010

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Fuel for Nuclear Power Plants from Westinghouse

Complete Cores for Nuclear Reactors
Fuel Elements—Metallic and Oxide
Structural Components
Control Rods

The Westinghouse Atomic Fuel Department, a privately owned manufacturing facility cleared and licensed by the Atomic Energy Commission, produces all of these items.

Latest methods of processing, manufacturing and quality control are used. Specialized equipment for mixing, pressing, sintering and grinding of oxide pellets and for cladding, flanging, pickling, inert-atmosphere welding, vacuum-annealing, liquid honing and corrosion-testing of metallic fuel plates and assemblies insures highest quality production of all cores and components. A completely isolated, air-conditioned high bay area permits dust-free, vertical assembly of complete cores.

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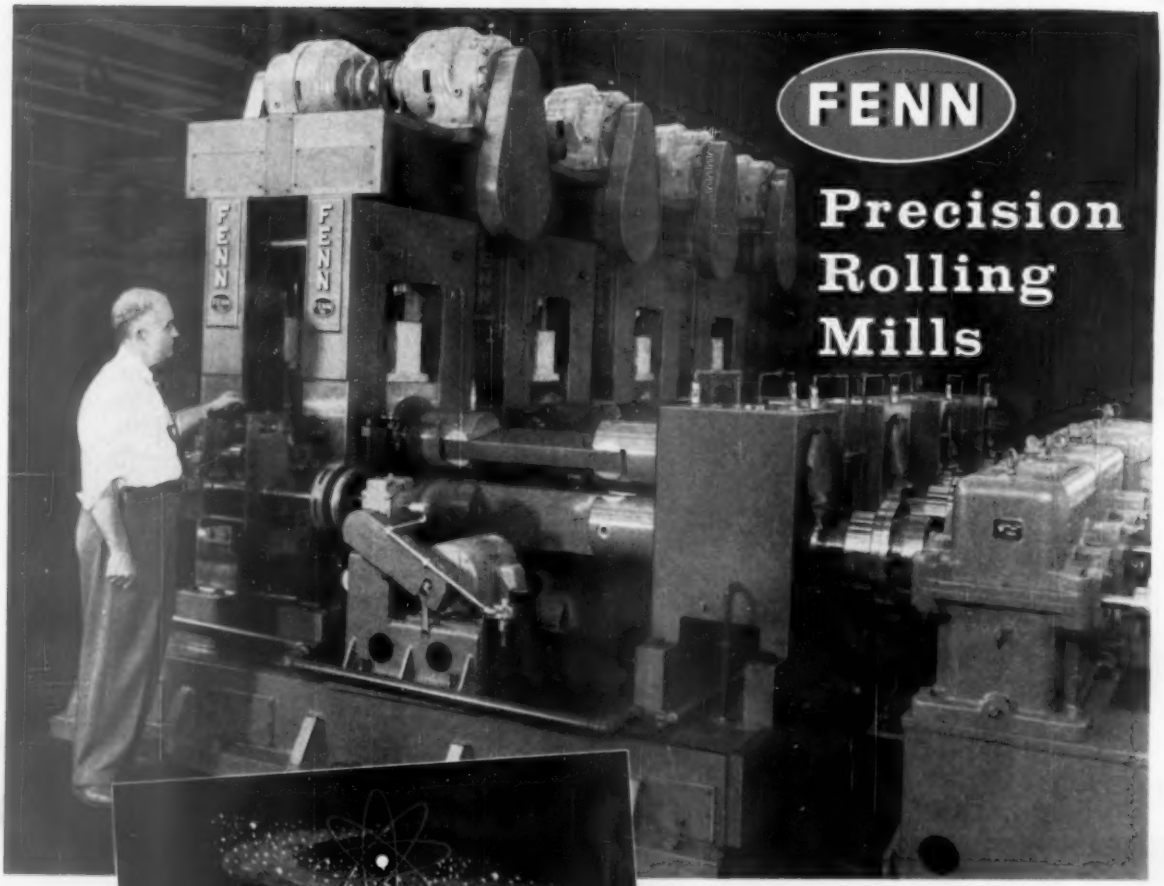


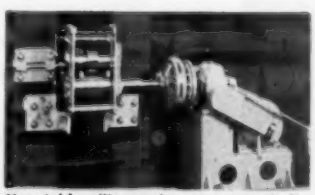
Core of Your Nuclear Planning

From Pilot Line to Production

The production rolling of fuel element plates with complete automation . . . free of camber . . . and with perfect surface finish, is typical of the nuclear metal forming problems submitted to Fenn engineers. Illustrated here is Fenn's solution to a typical nuclear requirement involving both Four-Stand and Two-Stand Mills with integral material handling equipment. Shown above is a Model 122 Four-Stand Two-High Mill with 12" diameter rolls. Each stand has separate DC drive and high powered dual motor screwdowns. It is equipped with automatic lubricating and internal roll cooling systems supplied from tanks self-contained within its heavy stress relieved welded steel bed.

Whatever your nuclear rolling problem, it will pay you to investigate thoroughly Fenn's Advanced Design Mills, noted for their inherent precision, flexibility and higher separating forces. Write for catalog FRM-58.

Illustrated above is Fenn Model 4-122 Two-Stand Four-High Tandem Strip Mill. It is equipped with 3½" diameter work rolls, 12" diameter back-up rolls and is work roll driven. Has same integral material handling equipment as Model 122.



Material handling equipment automatically conveys fuel element plates between each stand, providing sufficient force to insure roll bite while accurately guiding to prevent camber and still maintaining perfect surface finish.

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special experience

specially equipped

to process the metals required

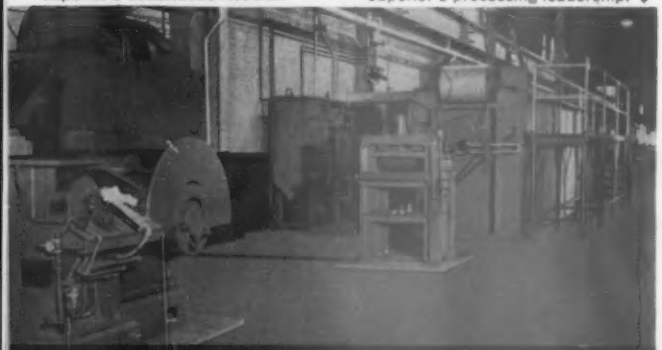
today in atomic energy applications

Superior Steel

Boron Stainless Steel • Zirconium • and its alloys

▲ Highest quality Boron Stainless and Zirconium strip are rolled on Superior's Continuous Hot Mill.

Vital to light-gauge Zirconium strip production are this modern Vacuum Annealing Furnace (top) and related pumping equipment.



Complete facilities for degreasing metals are an important element in Superior's processing leadership. ▼

A pioneer in the development of Boron Stainless Steel with experience in the rolling and processing of zirconium and its alloys, *Superior Steel* has the technical background, production experience and the special equipment necessary to meet the exacting requirements for atomic energy applications. Write for our Research Bulletin 57-N.

Superior Steel

DIVISION OF

COPPERWELD STEEL COMPANY

CARNEGIE, PENNSYLVANIA

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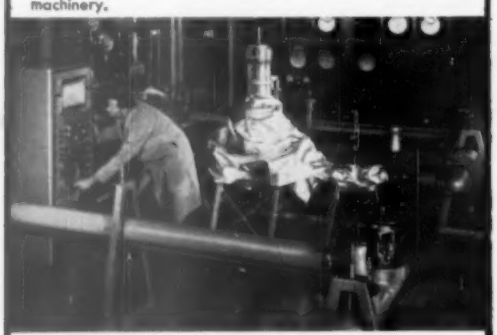
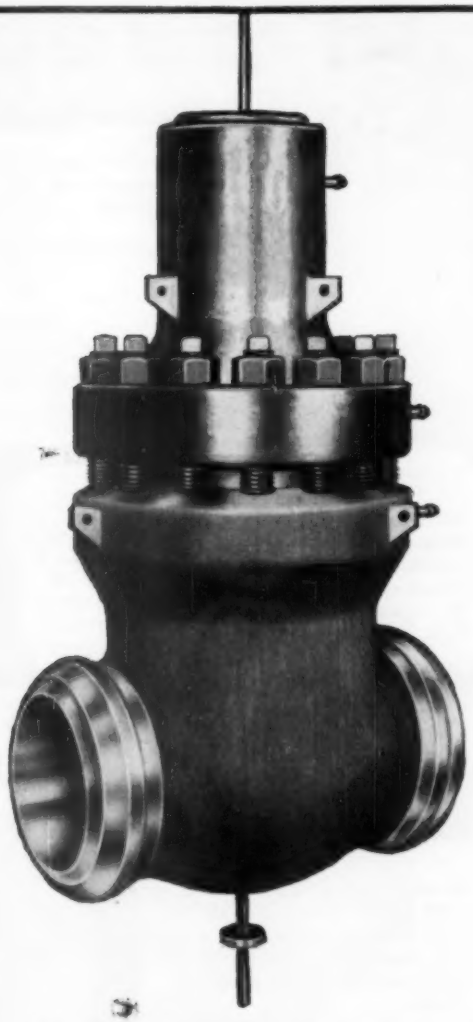
RADIOGRAPHIC examination of Type 304 valve body casting. Crane is completely equipped for atomic service valve inspection at every stage of manufacture.

MACHINING Type 304 valve body castings to extremely close tolerances is routine procedure with Crane skill and machinery.



HOT TESTING of Crane valves for atomic power service. Crane facilities include complete hot and cold loops, permitting testing to meet all specifications requirements.



Crane 16-inch, cylinder-operated gate valve for main coolant service in pressurized water reactor system.

For your nuclear power program . . . this tested know-how of valve making

Shown in the making, these valves will soon join thousands of other Crane valves in all types of nuclear operations—working and building—around the world.

In the U. S. Naval propulsion program . . . in government, university and commercial nuclear laboratories . . . in atomic power stations . . . Crane is the accepted name for valve dependability.

Pioneer in basic research for control of radioactive fluids, Crane today is in complete step with the atomic power program—in metallurgy and designing, manufacturing and testing of needed valves. For example, Crane was the first valve maker to undertake complete cold and hot loop testing.

Your atomic power project—whether on the boards or in the future—will advance more satisfactorily by consulting with Crane about the valves now.

CRANE VALVES & FITTINGS

PIPE • PLUMBING • KITCHENS • HEATING • AIR CONDITIONING

Since 1855—Crane Co., General Offices: Chicago 5, Ill.—Branches and Wholesalers Serving All Areas

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rigid specifications

Tension tests are required to be made at room temperatures and at 670° F. The following minimum physical properties shall be met:

At Room Temperature:

TS	YS	EL	RA	CHARPY V-NOTCH
70,000	30,000	45	50	50

At 670° F. the minimum tensile strength shall be 51,000 p.s.i. and the minimum yield strength 18,300 p.s.i.

Rejection

Each casting that develops unacceptable defects during shop working or fails to conform to all of the requirements of these specifications shall be rejected. No repair by welding or other means will be permitted.

All cast pipe shall be hydrostatically tested to 5,900 p.s.i. and held at that pressure for 20 minutes with zero pipe leakage. Each length of pipe shall be hydrostatically tested at the manufacturer's plant.

Radiographic Inspection

(a) Paragraph S5 (a) of the Supplementary requirements of ASTM-A 362-52T.

(b) All castings shall be radiographed 100% and shall conform to ASTM-E7 1-52, Class 2 quality, except as modified by these specifications.

(c) The manufacturer shall establish a positive system of identification of the X-ray plates which shall be subject to approval by the inspector. This system shall guarantee complete coverage by radiographing and provide for positive identification between the plate and the subject.

Inspection of Penetrants

All castings shall be subjected to inspection by fluorescent penetrants or penetrating dyes both inside and out. All cracks, porosity, or flaws revealed as a result of the Dye Penetrant Test shall be due cause for rejection of the casting.

The 304L stainless steel shall conform to the following ladle analysis:

Carbon	.03 max.		
Manganese	1.50% max.		
Phosphorous	.03% max.		
Sulphur	.03% max.		
Silicon	2.00% max.		
Chromium	18.00	-	21.00%
Nickel	8.00	-	11.00%

Pipe: All pipe of the following sizes shall be centrifugally cast stainless steel as per ASTM-A 362-52T, except as modified by these specifications:

16" - Sch. #160
12" - Sch. #160
10" - Sch. #160
8" - Sch. #140

All pipe shall be machine finished to 125 micro-inch interior and exterior.

for nuclear piping met by U.S. PIPE metal mold process

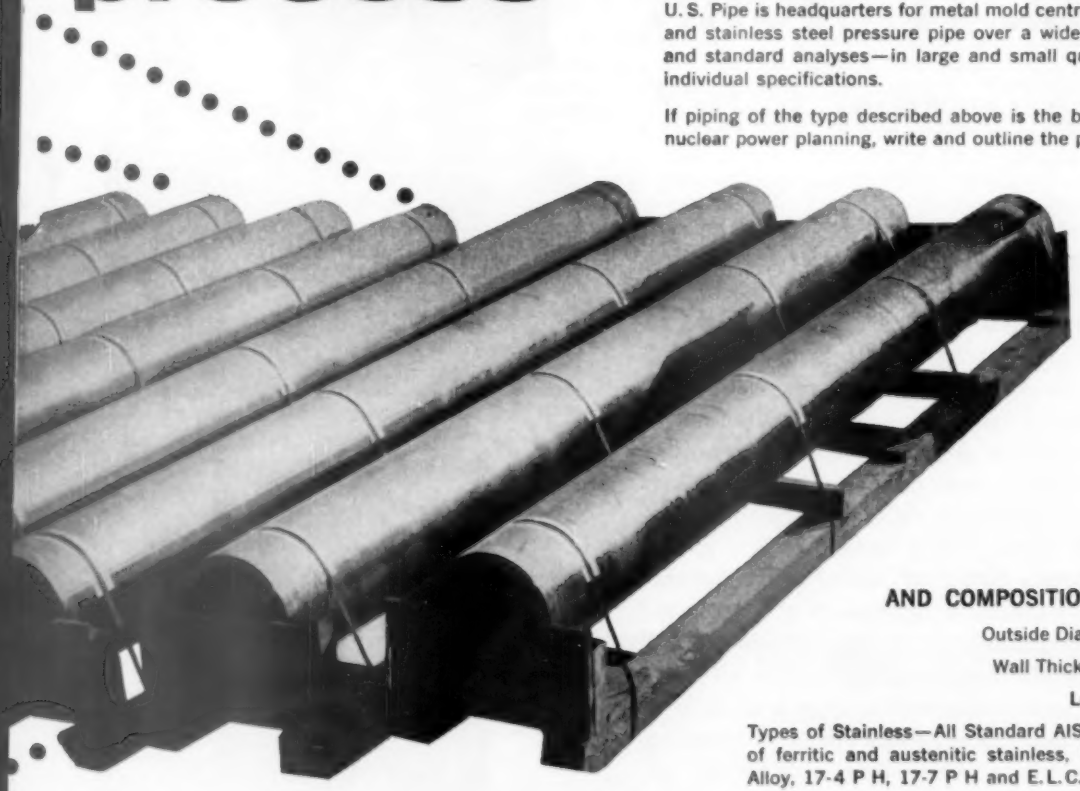
Centrifugally Cast Stainless Steel Solves Many Piping Problems

Combinations of temperatures, pressures and corrosive conditions never encountered before: these are among the piping problems that must be overcome by the men who design the nation's nuclear power installations.

Stainless steel centrifugally cast pipe provides many of the answers. Study the specifications at the left . . . specifications demanded of stainless steel pipe on a recent job for Paul Hardeman, Inc., Los Angeles, California. This pipe is being used for heavy duty, high pressure, elevated temperature service in the primary piping system of the SPERT-III Reactor at the U.S. Atomic Energy Commission's National Reactor Testing Station near Idaho Falls, Idaho. The Stearns-Roger Mfg. Company, Denver, Colorado, is the architect-engineer on this project. A complete tabulation of the actual test data obtained on this pipe and to this specification is available upon request.

U.S. Pipe is headquarters for metal mold centrifugally cast alloy and stainless steel pressure pipe over a wide range of special and standard analyses—in large and small quantities—and to individual specifications.

If piping of the type described above is the bottleneck in your nuclear power planning, write and outline the problem.



SIZE RANGE AND COMPOSITION FLEXIBILITY

Outside Diameter—6" to 50"

Wall Thickness—⅜" and up

Length—Up to 16'

Types of Stainless—All Standard AISI and ACI grades of ferritic and austenitic stainless, including No. 20 Alloy, 17-4 P H, 17-7 P H and E.L.C. grades.

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In-pile capsule adaptation

Instrumentation for in-pile tests

WILL IT WORK

in a radiation field?

How will a gear lube or a cermet—or for that matter, any material—stand up in a nuclear reactor? There is only one way to be certain. Expose samples to the intense neutron and gamma fields present in an operating reactor. Keep accurate environmental records, and, in a special facility, subject the samples to complete analysis.

NDA has advanced the art of in-pile testing to a science. It organizes the testing program, adapts capsules and environmental recording instruments for the in-pile tests, and, after irradiation, analyzes the samples, by now highly radioactive. This examination is carried out in a special radioactive materials facility of NDA-Pawling Laboratories. NDA has conducted a large number of complete in-pile tests, and its established procedures are quickly and economically adapted to new programs.

The need to know is imperative when a material is destined for use in a reactor. Firms interested in adding the growing reactor market to their customer list are invited to discuss a suitable in-pile testing program for their products.

NDA Radioactive Materials Handling Laboratory

Hot cell examination

a complete reactor company

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ROUNDUP of Key Developments in Atomic Energy

Euratom Making Big Strides Setting Up Machinery; Armand's Health, Third Party Liability are Problems

Euratom, approaching its first birthday as an international body with a legal personality and identity of its own, is displaying a quickening of activity as it prepares itself to become also a working, operating organism. At the same time, however, it is being hobbled by problems some of which were not foreseen when the Euratom treaty came into force on Jan. 1, 1958.

Chief among the problems are top leadership and insurance. Uncertainty about the identity of the head of an organization, as is the case with Euratom, can obviously have an unsettling effect in the period when its permanent machinery is first being set up, and the ubiquitous third-party liability bugaboo (*see page 23*) can complicate and delay ordering of nuclear equipment. Other issues now being tackled have to do with the criteria for choosing reactor types, sites and sizes; the nature of the Common Center(s) of Research to be set up; establishment of the Euratom Supply Agency; and of course the long-dragging question, as old as the Euratom idea, of the location of the permanent headquarters (Brussels is still provisional capital, but Italy is still holding out for Milan).

A running start has already been made on the vital matter of obtaining six-nation agreement on Euratom health-protection rules.

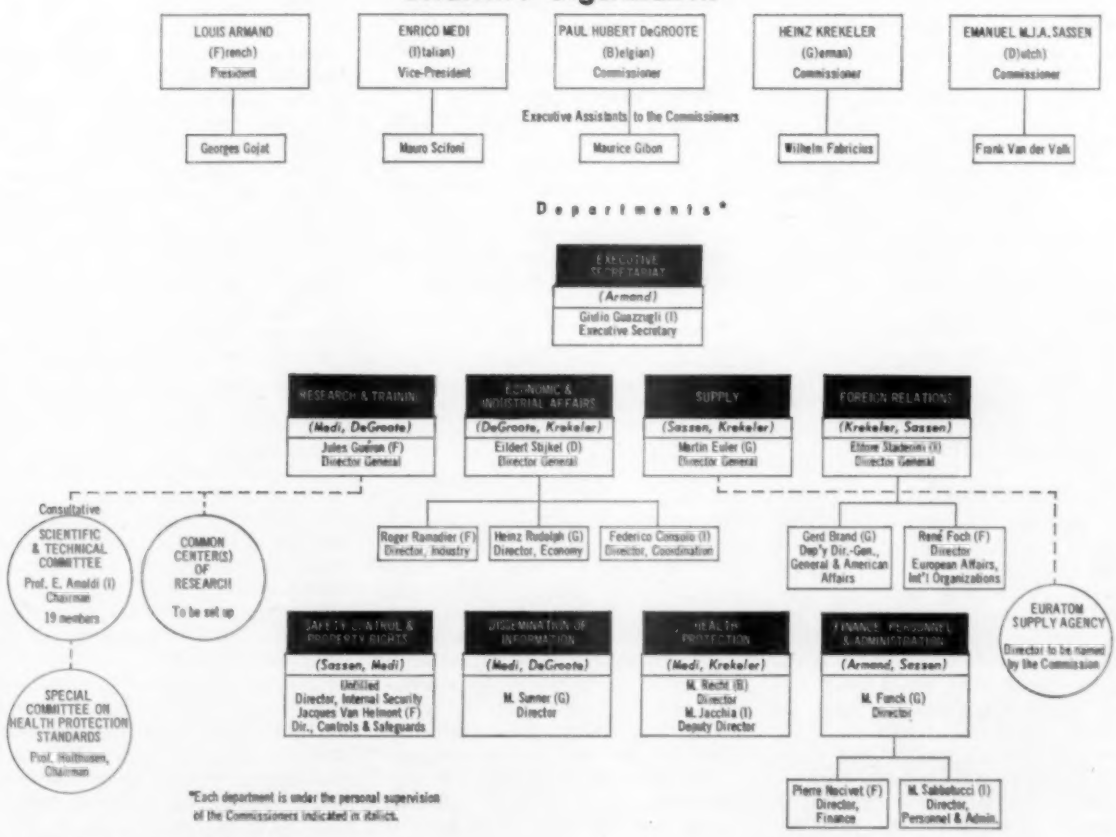
Who's President?

A year ago Euratom was being congratulated for having obtained as its president so vigorous a figure as Louis Armand, the man who in a few short years built up the French railway system from a gutted post-war skeleton to the acknowledged world's best, and who served as one of Euratom's "Three Wise Men." But Armand's health has not been equal to the strain: for some time now it has been no secret that he is seeking to resign. This is, among other things, the reason for cancellation of the mid-October trip to Washington of the Euratom Commission under Armand, to sign the U. S.-Euratom bilateral (NU, June '58, 17). The pact is now scheduled to be signed in Brussels Nov. 8.

Armand's successor has been chosen: Etienne Hirsch, head of France's Planning Commission, a former president of Electricité de France, another dynamic leader and ardent European (as opposed to nationalist). Hirsch's nomination has already been approved by the Euratom Council of Ministers. But apparently the French will not release Hirsch to go to Brussels until a suitable replacement is found to head "Le Plan"—and this selection has become embroiled in French politics.

However, another Euratom dele-

Euratom's Organization



*Each department is under the personal supervision of the Commissioners indicated in italics.

gation has been in Washington in the past month for talks with AEC, the Department of State and the Export-Import Bank. Its purpose: to define the technical, economic and financial criteria that will guide Euratom in planning the joint one-million-kilowatt power program. The Euratom officials also worked with the Bank on the details of the $135-million loan which Ex-Im will make to the Community to finance purchase of reactors and other equipment and services in the U. S.

Heading the group was Max Kohnstamm, special adviser to the Euratom Commission and chief negotiator for Euratom of the bilateral agreement with the U. S. Accompanying him was a 17-man team of high Euratom officials, including division directors-general and directors Consolo, Stijkel, Brand, Guéron, Rudolph, Van Helmont, and Nacivet (*see chart*).

The delegation also completed changes of detail in the bilateral to meet Congressional desires—mostly clarifying changes of language, including dropping the adjective "proven" in the definition of reactors the U. S. would finance, and extending some reactor terminal dates from 1963 to 1965.

Plans are now being laid to set up a joint U. S.-Euratom board in Brussels to handle cooperation on the joint program. Although physically located in Brussels, the board would be mobile and could be expected to spend much of its time in Washington. The U. S. already has an ambassador, W. Walton Butterworth, to the three European Communities (Coal & Steel, Common Market, Euratom); and eventually the latter will send an ambassador to Washington. But so smoothly has the working committee approach to U. S.-Euratom relations worked that it is felt there is no urgency about establishing more formal joint administrative machinery.

First Reactor Round

Although no decisions have been taken yet as to sites and sponsors for the proposed half-dozen-odd reactors to be built under the one-million-kilowatt program, a sizable number of European utilities have expressed interest in sponsoring reactor construction, and a great deal of informal dickering is going on among European utilities and U. S. reactor manufacturers. But until the technical, economic and financial criteria that will guide selection of reactor types, sizes and sites are agreed upon, it will be impossible for either European utilities or American manufacturers to make firm offers. Euratom officials expect to reach agreement on these criteria within about another month, and it is estimated contracting can get underway by the end of the year.

Indications so far are that the number of European utilities wishing to take part in the joint program will greatly exceed the number of reactors to be built, so it is premature to speculate which will be the reactor-sponsoring utilities.

A new figure of interest on the U. S.-Euratom program was given by AEC Commissioner John F. Floberg in a speech late last month: "Subject to Congressional approval of the bilateral, we will provide up to $90-million worth of guarantees of good performance of U. S. fuel in U. S.-built reactors, and my own opinion is that the redemption of those guarantees will actually come to about half that figure." This is in addition, of course, to $100-million worth of fuel advanced under a deferred-payment plan, $50-million for a five-year research-development program to be matched by Euratom, and $135-million in plant construction loans from the Ex-Im Bank.

Hirsch

Armand

Research Center

The Euratom Treaty provides $215-million for research over the first five years, to be spent partly by placing research contracts, partly by participating in nuclear ventures in various countries (not necessarily Euratom members) and partly by Euratom itself in its own Common Center of Research (CCR). This last was originally seen as a major establishment including a nuclear measurement center and standards bureau; a research documentation center, fully equipped with mechanical aids; a high-capacity electromagnetic isotopic separator, and a training center that could eventually broaden into a full-scale European University teaching arts as well as sciences. More recently, however, some have felt that to avoid national stresses over CCR's location such as are still beclouding the issue of Euratom's capital, the research center should be divided into smaller decentralized units at different sites.

Jules Guéron, director general of the Research and Training department which has cognizance over all Euratom's research efforts, insists that these must not be regarded by any member nation as a substitute for its own work; that the Euratom research program must be added to what would have been carried out by individual member countries, and that part of Euratom's task is to prevent this being diminished. At the same time, Euratom does not want its program to become no more than "a filler-up of holes" but on the contrary to become the main driving force.

The $50-million Euratom will put up as its share of the $100-million joint U. S. fuel-cycle research program will apparently be wholly or partly included in the $215-million research program under the treaty. In particular the Research department hopes to place on the joint program the cost of planning and building a new high-flux reactor, which it feels will be necessary to the fuel-cycle research program. This will be over and above the high-flux research reactors already built or building in member countries. Some unhappiness is evident over the fact the Euratom treaty did not come into force soon enough to have permitted joint planning that would have avoided duplication.

Unhappiness can also be sensed at Euratom headquarters over Britain's decision to drop its homogeneous power reactor project at Winfrith Heath (NU, May '57, 22). Euratom is collaborating with Britain, as part of a larger OEEC group of nations, on the advanced gas-cooled reactor the British substituted for that project at Winfrith, but consideration is being given to the possibility of Euratom embarking on a homogeneous project by itself. Euratom is also acting with other OEEC nations in taking over operation of Norway's Halden boiling heavy-water process-steam reactor (NU, Jan. '58, 21), and in building the Eurochemic chemical separation plant at Mol, Belgium.

Euratom also plans to carry out studies in fusion. The treaty provides $7.5-million from the five-year research fund for this, and present indications are that $11-million will be available, $6.5-million of which will be spent outside CCR.

GE Proposes Bold Acceleration Plan to Private Utilities; Urges Construction of 60 Boiling-Water Plants by 1970

General Electric has gone to the private utility industry with a combined sales pitch and warning that it must mount its own power reactor acceleration program—involving the construction of up to 60 boiling-water reactors by 1960—or face the loss of nuclear power initiative for the foreseeable future to the federal government.

In certainly the most audacious proposal yet made in the debate over acceleration of reactor development, GE has urged the industry to commit itself to build up to 50 identical reactors of 5-Mw(e) size and five developmental 25–100-Mw(e) reactors by 1963, and another six 100–450-Mw(e) reactors by 1970. All would be boiling water reactors.

The industry could achieve this, GE estimates, at a cost of $273-million above what it would spend for conventional or nuclear power stations over the same 1958–70 period. The alternative, GE insists, is a reactor acceleration program over which the private utility industry would have little control.

The GE proposal was made on the last day of a three-day (Sept. 23–25) utility executives' conference at Woodside, Calif., at which GE was host (NU, Sept. '58, 153). The stage had been set for the presentation during the Edison Electric Institute's Boston meeting in June: GE Chairman Ralph Cordiner proposed a special two-day meeting of private utility executives and all reactor manufacturers "for a thorough exchange of ideas on the nation's atomic energy policy" (NU, July, '58, 22). When the plan to include other reactor companies did not jell, GE went ahead alone.

Operations Know-How, Sunrise

The plan encompasses two coincidental building programs: **Operation Know-How,** a scheme to educate utility company personnel and the public through the operation and display of small reactors all over the country; and **Operation Sunrise,** an all-out effort to perfect boiling-water technology and make the concept competitive with fossil fuels by 1965 in high-cost areas of the U. S. and by 1970 in all areas.

Under Operation Know-How, GE told the industry, it could deliver 25 small reactors within three years; another 25 would be purchased from other manufacturers during this period. All would produce 22 Mw(th), 5 Mw(e). Using mass-production techniques and a single engineering firm, GE estimated, total cost of its reactors would run $4–4½-million each, including land, first core and test operation. An additional $500,000 each would be spent to fit out the stations for public exhibition (landscaping and a reactor building providing easy visual access to the reactor and an exhibit hall).

Operation Sunrise, GE claimed, would bring competitive power in high-cost areas in two steps and to all other areas in two more steps on the following timetable:

1. Five first-generation plants, all of which are now operating or are under construction: the two reactors of the Borax series; the Experimental Boiling Water Reactor at Argonne; GE's Vallecitos reactor and the 180-Mw(e) Dresden reactor.

2. Construction of five "developmental plants" by 1963: the 50-Mw(e), natural circulation plant already projected by Pacific Gas & Electric at Humboldt Bay, Calif.; a 25-Mw(e), forced circulation "compact" plant; a 25-Mw(e), high-power-density reactor; a 130-Mw(e), high-power-density reactor; and a 50-Mw(e) reactor with separate superheater.

3. Construction of three "evolutionary" plants by 1965 which would be economically competitive at their locations (8.5 mills or under): a 100-Mw(e), natural-circulation boiler; a 200-Mw(e), forced-circulation boiler; and a 325-Mw(e), boiler-nuclear superheater combination.

4. Construction of three "target" plants by 1970 which would be competitive with 25% of fossil-fueled plants completed at the same time (6.5 mills):—a 450-Mw(e), high-power-density reactor; and two others based on the technology of the "evolutionary" plants.

GE Philosophy

The "keynote" talk at Woodside was delivered by Francis K. McCune, GE vice-president for atomic energy. His argument for private initiative was twofold: (1) reactor development acceleration is now public policy in the U. S., chiefly for foreign policy reasons; and (2) the government will lay out an acceleration program next year unless private industry embarks on one of its own. He pointed to the program circulated in early September by the Joint Committee on Atomic Energy as the best indication of this (NU, Sept., '58, 155).

Left to its own devices, McCune said, U. S. industry would attain economic atomic power "on a time scale commensurate with the demands of our domestic economy." But, because acceleration "is here and it is irrevocable" the only remaining question is: "How should the program be implemented?"

"Each step [of an AEC-JCAE program]," he warned, "would be planned and controlled by specific determination of the government. . . . But we are now presented with the opportunity to prove through positive action that competitive power from the atom can best be accomplished by the free enterprise system."

Industry Favors Multi-Concept Approach

The private utility industry's reaction to the Woodside plan has been generally negative. However, GE's sales strategy has been to follow up the original presentation with personal calls on utility staff people; the success of its program cannot be finally assessed until this door-to-door campaign has been completed.

Nevertheless, industry spokesmen have raised these points against the plan: 1. it would commit to one reactor concept and to one reactor manufacturer an industry which has been traditionally strong for maintaining several equipment suppliers; 2. so much developmental work has already been done on other promising concepts that the industry could not be persuaded to abandon its present multi-concept approach to economic power; and 3. the private utility industry could not financially support both an all-out drive on boiling-water and a multi-concept effort.

Congressional sources see the plan as a sales tactic which would not affect the attempt of the Joint Committee on Atomic Energy to get AEC and industry agreement next year on an accelerated program, because it is confined to boiling water.

SENN and Euratom Give U. S. Reactors a Market Edge; Boiling Water Systems Win Prestige for Enriched-U

Capture of the coveted SENN award by General Electric's boiling water reactor, coming as it has on the heels of the U. S. arrangement to supply six reactors to Euratom countries over the next 3–4 years, seems for the first time to have given the U. S. an undisputed lead in the world reactor market.

This was apparent even in Britain last month, where top government officials—Sir Edwin Plowden, chairman of the U. K. Atomic Energy Authority and Sir Ian Horobin, parliamentary secretary to the British Ministry of Fuel and Power—revealed that Britain will investigate boiling water reactors because of their low capital costs. Sir Edwin, who said the AEA might decide to include an experimental boiling water reactor in its program, told NUCLEONICS that the export market had been over-emphasized (*see next page*).

With the coincident decline of the British position in Japan (NU, Oct. '58, 32)—the new Japanese atomic regime is finding the high capital costs of a Calder-type increasingly difficult to accept—U. S. experts were finding confirmation of their predictions that enriched-uranium reactors would overcome the gas-cooled reactors' early lead.

GE was unabashedly elated over the outcome of SENN's international bidding procedure (NU, Oct. '58, 25). The company's atomic energy officials were quick to caution that they are aware they continue to face stiff competition at home and abroad. Nevertheless they think the outlook for boiling water units is "great" and are convinced it will be the first to produce competitive nuclear power in the U. S. They feel further that the SENN award, after an exhaustive review of proposals from nine contenders, gives the BWR a decided competitive advantage in domestic and world markets.

British Competition

The SENN project was the first head-on bidding between U. S. and British reactors and GE takes the view that the most significant factor in the contest was the failure of Britain's best bid to come close to GE's on capital costs. It is this capital advantage which has given enriched reactors their lead—a lead which the U. K. will admittedly have difficulty cutting into except where the choice of a reactor is more political than economic.

"SENN was a test case," a British industrialist told NUCLEONICS last month. "We are very much alive to the fact that the American boiling water reactor licked us and that possibly this may influence other buyers. But we are not going to bury our heads in the sand by any means.

"Boiling-water capital cost placed at $224/kw while ours went in at $406. The implications must be obvious to everybody. Either we must pull specific capital cost down to a point where the cost of electricity is the same (this does not mean all the way down to $224 because our natural-uranium fuel is cheaper) or else we must reduce the fuel price.

"But [we] would have to reduce it a long way to make any difference and the trend is going the other way."

This point on capital costs was nailed home a little farther by the Atomics International disclosure that its construction bid was even lower than GE's; or, in terms of the best gas-reactor bid, even more favorable for the enriched-U cause. AI said its organic-moderated reactor did not go to the "finals" in the SENN bidding primarily because 1. the concept lags behind light water in commercial development to some extent; and 2. the fuel elements have not had sufficient irradiation experience (NU, Oct. '58, 29).

Some U. K. industrialists sloughed off the SENN award on the ground that Italy was ripe for an enriched-U reactor because another Italian group (AGIP Nucleare) had already ordered a British reactor (NU, Oct. '58, 23). Another British view was that the Italians were already committed to one gas-cooled and one pressurized-water reactor (Westinghouse-SELNI) and that it was to be expected they would choose a boiling-water plant.

"We were disappointed; I don't think we were surprised," said J. A. Jukes, economic adviser and principal programming officer of the UKAEA.

"It was clear that the Italians would want to try an American re-

SENN and Euratom

SENN'S eligibility for the U. S. fuel warranties of the 1,000,000-kw Euratom program is uncertain. GE and SENN see the reactor itself as outside the kilowatt goal but SENN has applied to Euratom for fuel supply (NU, Oct. '58, 26) on the assumption that any Euratom country is eligible for the U. S. warranties. In the end the question will have to be cleared up by the U. S. and Euratom governments and the Joint Committee on Atomic Energy. Also, there is known to be a feeling in some quarters in the Joint Committee on Atomic Energy that the many millions of dollars for Euratom was voted by Congress with the expectation of pushing the state of the reactor art at least one full generation further ahead, and that this money was not intended for use on reactors of the Dresden-Yankee generation such as SENN.

STRONGLY RESEMBLING DRESDEN PLANT being built by General Electric southwest of Chicago—and recalling also the trylon and perisphere of the New York World's Fair of 20 years ago—the SENN boiling water reactor is shown in artist's conception at its site at Punta Fiume on Italy's west coast between Rome and Naples

actor and the General Electric boiling reactor looks very promising. The SENN reactor is to be 150 Mw. If it had been 200 or 250 we would have been surprised to see it go to the U. S.

"With natural uranium we can go up without major changes in design; whereas at 150 Mw a boiling reactor is near maximum size at the present state of the art."

Euratom Next Test

Jukes also emphasized—and this was readily conceded by GE spokesmen—that the SENN decision was based in important part on the fuel warranties offered by the U. S. under the Euratom agreement for the first ten years of the arrangement. GE says its warranties to SENN on both fuel cost and burnup are as good as the government's (10,000 Mwd/ton and $140/kg ceiling on the zirconium-clad elements). But, GE said, SENN wants the cost protection of the AEC's warranty over the full ten-year period—something GE's warranty does not provide. However, there is a question about SENN's eligibility for the Euratom warranties (*see box*).

"The Italians," Juke declared, "are getting the benefit of the U. S.-Euratom guarantee on fuel costs which are based on a philosophy we find it difficult to adopt. It's difficult to meet such competition."

In sum, Jukes, as well as other British leaders, have made it clear in talking to NUCLEONICS correspondents during the last month that the U. K. is not prepared to meet the U. S. concessions to Euratom—the next and most important "battleground" in the world reactor competition.

The British are continuing their negotiations with Euratom and they hope to have an agreement signed before the year's end (Max Kohnstamm, chief Euratom negotiator in the U. S. arrangement, has the same responsibility in the U. K. talks). However, it will be more limited than the U. S. agreement. It will provide for exchange of information and the usual power bilateral arrangements covering the supply of fuel and technical aid. But it will not have provisions for a jointly financed research program.

Arrangements concerning fuel purchase in each case will take the form of a contract between British suppliers and foreign buyers, with the UKAEA a contract party. Fuel guarantees will come under individual fuel arrangements and will thus be covered in a purchase contract—not in a bilateral.

The attitude of the power reactor consortia toward Euratom was summed up by a U. K. industrialist: "We have had Euratom officials here. The people we really regard as serious are representatives of commercial power undertakings who are ready to buy. They are likely to prefer coal now unless they get political subsidy. We can never lose sight of the fact that the nuclear power business is conducted on two levels—political and commercial."

British Spokesmen Differ on Importance of Foreign Sales

From British atomic energy circles last month came differing opinions about the importance of the world market to the U. K. power reactor industry. Sir Edwin Plowden, in an interview with NUCLEONICS, said the reactor export market has been greatly overemphasized; Sir Ian Horobin, on a visit to Argonne National Laboratory, said the U. K. domestic market of two reactors per year was not large enough to satisfy the needs of Britain's reactor-manufacturing complex.

Sir Edwin, chairman of the U. K. Atomic Energy Authority, stated his view shortly after the announcement that the U. S. General Electric had won out over eight other bidders (three U. S., four U. K. and one French) in the SENN international reactor steeplechase.

"The possibility of reactor exports has been exaggerated [by both the U. S. and U. K.] in these early years," Sir Edwin declared. "There are going to be exports but most exported reactors will be built under license. The old and widespread concept of reactor exports being an eldorado has always been hooey."

Sir Ian, parliamentary secretary to the British Ministry of Fuel and Power, visited Argonne to talk about boiling water reactors and inspect the EBWR (Experimental Boiling Water Reactor). He took the occasion to call for a U. S.-U. K. program of free exchange on boiling-water technology like that on fast breeders (NU, Sept. '58, 154), then explained that some British firms are reluctant to reveal information on their gas-cooled reactors because of U. S. competition in the foreign market.

"Our firms have to sell overseas," he said. "Two reactors a year at home are not enough to keep our atomic energy industry going."

Sir Ian also confirmed that Britain is investigating the boiling-water concept, as well as advanced gas-cooled reactors, to fill the gap between the current building program, which runs through 1966, and the time when breeder reactors will be available on a large scale.

"The most promising thing about boiling-water reactors is that they require relatively low capital investment, while our current power reactors require a big investment," he commented.

The export attitude of AEA's Sir Edwin was reinforced by spokesmen for British reactor consortia. One leading industrialist explained: "If we get Trawsfynydd [next civil station to be awarded] it means a $168-million order, all of it to be built in the U. K. If we get an export order, 70% of the work would be done abroad, only 30% here. And, moreover, we have a problem directing work at a distance. Finally, a foreign order is likely to be for a station with one reactor—and that one smaller than the next round of civil stations. Therefore, one home job is worth three or four foreign jobs to us and our main effort is being concentrated on the next Central Electricity Generating Board awards."

Another consortium leader pointed out that U. K. production capability was such that "we would well export as many kilowatts as we build in this country. But it wouldn't mean as much income. Financially a domestic reactor means $168-million to us, an export one $56-million—of which we get one half in cash. So the value of a foreign job is as one in six."

However, Britain is far from having given up the export market. In addition to the firm order from AGIP Nucleare and the foot-in-the-door in Japan, U. K. firms have bids out in Holland, Belgium and on two German jobs.

The attitude of the British towards the export market, as reported above, is in direct contrast with that expressed in the U. S. Interviews NUCLEONICS has had in the past month with leading American manufacturers have underscored the importance that the U. S. nuclear industry is placing on foreign business in the next year—in particular, in the Euratom countries.

Pittman New Reactor Chief; 'Task Forces' Introduced

AEC, its reactor development division pressed by something of a manpower crisis since the exodus this summer of former director W. Kenneth Davis and three of his top aides, has taken two steps to restore staff equilibrium: **1.** a new division leadership under Frank K. Pittman, acting director for three months, has been selected to succeed the Davis regime; and **2.** a trial "task force" system has been instituted to bring into the division on a temporary basis reactor people normally stationed at AEC field installations.

The first of a possible series of task forces completed several weeks' evaluation of the sodium concept last month, reported to the reactor development division, then disbanded. If this first attempt to use the task force system has been successful, other groups will be formed at suitable intervals to advise the division on light-water, gas, liquid-metal-fueled, aqueous-homogeneous, organic-moderated and other reactor concepts. The sodium force included people from Oak Ridge, Brookhaven, Argonne and the National Reactor Testing Station.

Confirmation of Pittman as reactor chief was accompanied by another reorganization of AEC's civilian atomic energy organization: a merger of the Reactor Development Division and the Office of Industrial Development. In the last three months, Pittman has acquired a feel for handling both jobs and the consolidation was tied to his taking over Reactor Development.

However the area of isotopes is taken out of the combined division and set up once again as an independent Office of Isotopes and Radiation Development with Paul C. Aebersold acting in charge. He heads AEC's isotope expansion program (NU, Oct. '58, 17) and was long head of the former Isotope Extension of AEC before its merger with the Office of Industrial Development.

New Leadership

Even without isotopes, the consolidation of OID with Reactor Development makes Pittman one of the most powerful—and probably most overworked—men in the Commission. His selection as reactor development chief promises a smooth transition in reactor program direction.

The 44-year-old Californian has been directing the reactor program in an acting capacity since Aug. 5; he has had 14 years of management experience with AEC and its predecessor Manhattan District; and he knows his way around Washington—after nine years at AEC headquarters.

Frank K. Pittman

He demonstrated this last qualification in August when he teamed with Commissioner John Floberg to lead the Administration's successful fight for Congressional approval this year of a U. S. partnership with the six Euratom countries.

Pittman was born in Sacramento on Sept. 31, 1914. He received his bachelor-of-engineering and master-of-science degrees from Vanderbilt, then got his doctorate from Massachusetts Institute of Technology in 1941. He was a member of the MIT faculty from 1940 to 1943.

His experience in the atomic energy program dates back to 1944, when he joined Los Alamos Scientific Laboratory; he was in charge of plutonium production there from 1944 through 1948. Shortly after he moved to AEC in Washington in 1949 he was named deputy director of the production division, holding the post until 1955 when he moved over to the division of civilian applications as deputy to director Harold L. Price. Then, last December, he took over the new Office of Industrial Development when the Division of Civilian Application was split up into OID and the Division of Licensing and Regulation.

New Reactor High Command

Frank K. Pittman	*Director*
Allen J. Vander Weyden	*Deputy Director*
Assistant Directors:	
Ulysses M. Staebler	*Senior Asst. Director and acting head, Reactor Projects*
R. Carson Dalzell	*Asst. Director*
George G. Marvin	*Asst. to the Director*
Nelson F. Sievering, Jr.	*Asst. to Director for Foreign Activities*
Charles G. Manly	*Commercial Activities*
George M. Cavanaugh	*Nuclear Technology*
Vice Adm. H. G. Rickover	*Naval Reactors*
Richard P. Godwin	*Maritime Reactors*
Col. D. G. Williams	*Army Reactors*
Maj. Gen. D. J. Keirn	*Aircraft Reactors*
Hugo N. Eskildson	*Contracts, Budget, and Administration*

Task-Force System

The task-force approach to reactor-concept evaluation is something new for AEC. The idea is to exploit more fully the manpower of Commission field operations, thereby **1.** bringing fresh, high-caliber talent into the reactor policy-making process; and **2.** avoiding the necessity of hiring fulltime staffers for the reactor development division.

Division sources indicate that the second reason is more applicable than the first. In September, the Bureau of the Budget sent a letter to all government agencies calling for "spartan economy" and urging a 2% cut below budget levels in the current fiscal year. This has been reflected at AEC in a holddown on the hiring of personnel.

Aside from budget considerations, however, the task force system is expected to make a positive contribution to reactor development. The magnitude of such potential contribution can be gauged by some of the questions put to the pioneering sodium task force: What is sodium's short- and long-range promise economically? what are the problems—materials or otherwise? what should be done to solve materials and/or operating problems? how and on what time scale should a development program be carried out?

The group's answers were turned in to reactor development last month in the form of an internal report and will not be published. It covers Title I design of Hallam and the sodium concept generally. Under the chairmanship of George J. Petretic of Reactor Development's evaluation unit, the force included James M. Day, Phillips Petroleum at National Reactor Testing Station; D. Devan, Garland Samuels and James Lane, Oak Ridge; J. H. Schraibt and Charles Bullinger, Argonne; and K. W. Downes, Brookhaven.

AEC Launches Fuel, Test-Reactor Programs

AEC, having unusually large funds available to industry for development work, last month supplemented its reactor and radiation contract invitations of August and September (NU, Oct. '58, 21) with offers to support 1. research and development projects on the nuclear fuel cycle and 2. private construction of test reactors.

Under the first—the "fuel-cycle development program" (NU, Apr. '58, 18), as AEC has named it—AEC will make contracts available for projects in six major fuel cycle areas: chemical processing (except uranium concentrating), fuel element materials and designs, irradiation and post-irradiation studies, fabrication, testing of single elements or small batches in test reactors and testing of large batches in full-scale power reactors.

"Commission experience," the AEC invitation of Oct. 15 said, "indicates that a substantial reduction in operating costs of power reactors can be achieved by decreasing chemical processing, reprocessing and fuel-element-fabrication costs, and by developing fuel elements having increased burnup and ability to operate at elevated temperatures."

To this end, AEC is willing to buy industry's services and lease facility space under one or more contracts; $13.5-million is available this fiscal year. Its offer places no limitation on the design or type of fuel element to be developed, nor on the fissionable materials to be used in such elements. An Oct. 29 deadline was set for "expressions of interest" from industry.

Test Reactor Incentive

The test reactor program—an open offer to rent space in given test reactors for up to five years—is aimed at encouraging private construction of one or two reactors beyond those under construction by General Electric and Westinghouse (GETR and WTR, respectively). AEC went to the Budget Bureau earlier this year for funds to build its own reactors but was persuaded to try this alternative; either way, the reactors are felt to be vital to the overall program to cut nuclear fuel costs.

AEC has $15-million to support the 5-year plan for purchase of reactor space. Since no test reactors but those of GE and Westinghouse will be available before June 30 any space purchased this year would have to be in these reactors. The two plants could meet AEC's requirements as set forth in its Oct. 2 invitation but AEC officials said this was not the intention of the invitation and they would be disappointed if only GE and Westinghouse came in with proposals before the Jan. 12 deadline.

"We set forth our requirements without any consideration of what space may be available," said an official of the reactor development division. "I would like to see one, perhaps two, more test reactors built."

This, he said, would include the test reactor projected by Industrial Testing Reactors, Inc., in North Carolina (NU, May '58, 26). ITR has not applied for a construction permit but AEC said it would welcome the project as one of those encouraged by the invitation.

Space required for testing programs now planned will be needed over a period of at least five years beginning immediately. Requirements for loop facilities are: by size, four loops 4–6 in./dia and six loops 3–4 in./dia; or, by flux, six loops of $1–5 \times 10^{14}$ n/cm²/sec and four loops $0.5–1 \times 10^{14}$. (Flux values refer to the unperturbed flux which should exist in the facility in the absence of process tube or test sample.) No more than 50% of the space specified will be procured from a single supplier.

Although the deadline is Jan. 12, AEC requested "initial indication of interest" by Nov. 2.

Early Liability Solution Seen Vital to Euratom

General Electric and SENN sat down last month to work out third-party liability provisions for the latter's reactor—preparatory to signing a letter of intent (*see page 20*)—and therein lies a tale of possible trouble for SENN and other European nuclear power projects.

GE and its new customer were having difficulty for reasons which apply to all western European reactor projects where the government is not the sole sponsor: the utilities do not have sufficient financial resources to protect their suppliers from possible damage claims, they cannot get enough protection in the European insurance market, there are as yet no "Price-Anderson" arrangements bringing government protection into the picture, and any solution would have to take into account the risk of incurring damage in neighboring countries.

"The whole Euratom program," warned GE's George White, manager of the atomic power equipment dept., "depends upon a quick resolution of this indemnity problem. Before plants of any kind can be started, governments of all the Euratom countries have to pass legislation protecting their own nationals and those of surrounding countries."

AEC view. In Washington, where government officials were wrestling with the U. S. indemnity program (see page 27), AEC's insurance experts seconded the White warning: "The real indemnity problem now lies in Euratom. Unless it is solved, there won't be any U. S.-Euratom program." No U. S. manufacturer, they said, can take a chance on going into a foreign project without financial protection and liability limitation.

OEEC Proposal

A giant step toward solution of the problem, AEC and Euratom officials feel, has been made in the draft liability convention to be presented this month to the Ministerial Council of the Organization for European Economic Cooperation (OEEC); the 18 member states are expected to ratify the convention next spring. The convention frees all but reactor operators from liability and limits operator liability to $15-million per incident (NU, Oct. '58, 28).

This ceiling is considered by AEC and Euratom to be on the low side and Euratom is working on a supplementary program. Such supplementary action is permitted by the convention, with the stipulation that any additional protection cover all injured parties, including those across national boundaries. Other highlights of the convention:

- It covers all reactors, fuel manufacture and processing plants, isotope separation facilities and radioactive waste operations.
- It does not cover propulsion (nuclear merchant ships, etc.) but it does cover the transportation of irradiated fuel and reactor wastes and by-products. A new group of OEEC experts has been created to prepare a liability convention covering all transport problems.
- A 10-year maximum period from date of incident has been set for the filing of claims. But individual states are free to set a shorter period to cover delayed injuries from radiation.

NASA Takes on Rover; Budget Problems Arise

Project Rover—the nuclear rocket program—has been taken over from the Air Force by the National Aeronautics and Space Administration and, in the process of becoming a civilian project, has suffered a substantial cut in funds for the current fiscal year by the Budget Bureau.

Moreover, Rover's fate beyond next July 30 is now being debated at a high level within the Administration. At stake: whether to continue the project at its present rate of development—a year-to-year growth in spending to upwards of $150-million annually—or to reduce it to a level of relatively minor research effort which would postpone a successful rocket flight for years beyond the 1968 target date.

NASA has assumed over-all program direction for Rover, plus responsibility for nonnuclear components of the rocket. Nuclear responsibility, however, remains with AEC; all reactor development work is being done by the Los Alamos Scientific Laboratory and its private contractors (NU, July '58, 69).

NASA officials told NUCLEONICS last month that they were as heartily in favor of perfecting a nuclear rocket as were their military predecessors. "We will support Rover with the object of getting this thing done as quickly as practicable," an agency official said. In this vein, he added, NASA will attempt to get the unspecified but "substantial" cut in the '59 budget restored—either by transfer of funds from some other project or by a request for more funds from Congress early next year.

In the meantime, the agency insisted, Rover is going ahead on schedule except for the normal slowdown that occurs when any project is transferred from one agency to another. In the long run, it was contended, the project will move ahead more efficiently than it did under AF sponsorship.

Col. Jack Armstrong, who as Rover chief at AEC wore both AEC and AF hats, but now works for AEC alone, agreed with the NASA statement that Rover has not been slowed as yet by a lack of funds; he said AEC was getting all the money it required to proceed with the reactor portion of the program without delays. Kiwi-A, the Rover reactor project at Jackass Flats, Nev., will undergo its first tests early next year.

What neither agency has control over, except as advisers to the President, is the high-level priority decision now being weighed at the White House. The appraisal is taking place primarily because of the experience of the Administration in the aircraft nuclear propulsion program. After the government was committed to a major effort on the nuclear aircraft it was decided that the plane was not of a top-priority nature. Thus, some in the Administration feel it is spending $150–$200-million yearly on an ANP project which does not rate this support.

The budget process is often the balancing of one project against a competing one—in this case the nuclear rocket versus the several chemical rockets. If an expensive program is to be mounted for Rover as a civilian project the Budget Bureau and White House want to be certain that the investment will pay off in the crucial area of national defense, as well.

RUSSIAN ICEBREAKER Lenin (left) at dockside in the Leningrad shipyard where she was built. Her three pressurized water reactors—top of one is shown in photo at right—are scheduled for final testing this month; late word from Moscow says her builders "have decided to complete mooring trials by early April." See photos NU, Aug. '57, 18; Jan. '58, 22.

Strauss out of atomic energy picture

Lewis L. Strauss was appointed Secretary of Commerce last month to succeed Sinclair Weeks; Strauss had served as special advisor to the President on atoms-for-peace since he left AEC in June (NU, Aug. '58, 23). Shortly after the Strauss appointment, AEC Chairman John A. McCone held his first press conference and disclosed that he would not don a "second hat" as special Presidential advisor on atomic energy. He said he would have sufficient access to the President as AEC chairman.

Westinghouse invents the OMFBR, for Burlington, Vt.

An Organic Moderated Fluid Bed Reactor is being developed by Westinghouse for the Burlington (Vt.) Light Dept. (NU, Sept. '58, 153). This 50-Mw(e) reactor would use fuel in the form of marble-sized uranium pellets thinly clad with metal or ceramic, lying in a large cylindrical container open at the top and having fluid flow holes in the bottom. Surrounding this container is the reactor vessel. The pellets, resting subcritically in a settled packed bed before start-up, disperse upward throughout the container under pressure of flow of coolant: oil similar to ordinary diesel fuel. Reactivity is so calculated that the reactor may be controlled by the rate of coolant oil flow, regulated by a variable-speed main primary coolant pump; no control rods are used. The coolant oil could be bled off continually and fed to a superheater. Responsible for the original idea is Westinghouse's James Wright.

Healthy response to advanced reactor bid

AEC's Idaho Operations Office said last month that 32 firms had submitted 86 proposals to conduct studies on three advanced reactors—pressurized- and boiling-water and organic-moderated.

Reactor News

GE TO BUILD BOILING REACTOR FOR GERMANY

GE will build a 15-Mw(e) boiling water reactor for AEG of Germany, prime contractor on the $10-million RWE nuclear power station at Kahl near Frankfurt (NU, July '58, 28). The unit will use low-enrichment uranium oxide fuel, provide 232,000 lb/hr steam at 650 psig, will start up in late 1960.

AF ORDERS FIRST STATIONARY REACTOR . . .

The Air Force, ordering its first stationary reactor, invited the reactor industry last month to bid for a contract to design and build a true packaged power reactor for prototype operation at an AF installation in the U. S. The Army Package Power Reactor (APPR-1) at Fort Belvoir, Va., is not considered adequate for the rapid transport and erection needs of the military because it is too bulky and complicated. The AF, inviting bids through AEC's Army Reactors Branch, says it wants a plant using "advanced technology to provide factory-assembled modules or units which can be air transported to a remote site and rapidly connected [and] disassembled and relocated." The reactor must be pressurized-water and capable of producing 1 Mw(e) and 2 Mw(th). Bids are due Dec. 1 for design, development, fabrication, installation and test operation on a 30-month completion schedule (mid-1961).

. . . AND PENTAGON WILL ORDER MORE

Military sources told NUCLEONICS last month that the Defense Dept., beginning in the fiscal year which starts next July 1, will launch a purchasing program of reactors to be installed at remote locations. Its lone reactor to date outside the U. S. is being built in Alaska for the Army. However, fiscal year 1960 will see the start of a reactor installation program that will continue on an upward curve over the next several years as the Pentagon moves to meet the power needs of its early warning system and other remote installations. The first stations will follow the designs of APPR-1 and the Argonne Low Power Reactor in operation at the National Reactor Testing Station; both of these designs are ready for immediate military use, according to Pentagon officials. Later plants will reflect the gas-cooled concept (a gas-cooled reactor experiment for the Army is building at NRTS) and the package power concept now under sponsorship of the AF.

McCONE NAMES REACTOR ADVISORY GROUP

Following the recommendations of the Joint Committee on Atomic Energy and the AEC General Advisory Committee, AEC Chairman John A. McCone last month appointed an ad hoc advisory committee to the Commission on reactor policies and programs. The group has eight members, including a government chairman—Alfonso Tammaro, assistant AEC general manager for research and industrial development. The top-notch industry membership includes: James Black, chairman of Pacific Gas and Electric; Marion W. Boyer, Standard Oil of New Jersey and former AEC general manager; Harvey Brooks, Harvard Univ.; Eger V. Murphree, president, Esso Research and Engineering; Henry D. Smyth, Princeton Univ.; Eugene Starr, Bonneville Power Administration; and Robert E. Wilson, former chairman of Standard Oil of Indiana. The committee will review the civilian power program every few months and give AEC advice on reactor policies.

AEC PUSHES NEW FAST REACTOR STUDY

Following up promising development work at Knolls Atomic Power Laboratory, AEC scheduled an 18-month development program last month for a fast breeder reactor concept using a plutonium-oxide–uranium-oxide fuel cycle. Industry was invited to do the work under a cost-type contract; proposals were due Nov. 3. Preliminary study at KAPL, AEC said, indicates that long-lived oxide fuel elements can be combined with low-cost fuel fabrication and reprocessing techniques to make fast breeders economic.

AEROJET AGN-211 TO BE LICENSED

AEC gave routine notice last month that it was ready to license the AGN-211 research reactor of Aerojet-General Nucleonics for sale to any licensed customer. The licensing action which came after AGN furnished radiation data on the first AGN-211 operated at Aerojet's California plant, specifically covers the second in the series. The reactor may operate at 15 watts maximum.

"PINS" PERMIT FULL POWER AT ETR

Babcock & Wilcox claimed credit last month—through the assembly of fuel elements with "pins" rather than brazing or soldering—for full-power operation of the Engineering Test Reactor at NRTS. ETR had been forced to operate at only half its rated 175 Mw(th) for some time because of plate buckling under hydraulic forces (NU, Jan. '58, 102). ETR reached its full design power for the first time on April 21 (NU, May '58, 28) but details of its new, aluminum-pinned fuel elements were not disclosed until last month. . . . Earlier, B&W held a "press day" at its Lynchburg facility to show off its new research reactor and hot exponential facility for testing of fuel elements. The exponential facility—built onto one end of the reactor—permits irradiation of elements under heat and pressure conditions which can be accurately extrapolated to full-sized, pressurized-water reactors. B&W also disclosed that it has asked AEC to support a feasibility study of its gas suspension reactor.

SANDIA REACTOR NEARING CONSTRUCTION

The Sandia Engineering Reactor Facility (SERF), Sandia Laboratory, N. M., is moving toward the construction stage; the $2.9-million facility will be used for radiation work in the weapons program. Bids for the nonreactor portion of the project (housing, radiation shielding, etc.) will be opened by the AEC Albuquerque operators office Dec. 18; reactor bids have not yet been issued. Special features include a remote system for inserting or removing samples while the reactor is at full power, and a "hot" room in which irradiated materials can be moved about by a remotely operated crane or by an operator riding in a shielded mobile remote handler. Completion target is the spring of 1960.

BUFFALO REACTOR GETS $425,000 FROM NSF

Buffalo Univ. has been granted $425,000 by the National Science Foundation for its research reactor. With local industry and the National Institute of Health putting up the balance—$1,050,000—Buffalo is now free to proceed with construction of the 100-watt reactor in the next 3–4 months for operation in 1960.

AEC CLEARS NASA REACTOR OPERATION

The National Aeronautics and Space Agency (formerly the National Advisory Committee on Aeronautics) has gotten AEC clearance to proceed with operation of its zero-power, solution-type reactor at the Lewis Research Center, Cleveland, subject to the usual 15-day wait.

ROUNDUP

World News

U. K. Leader Urges Gaseous Diffusion Exchange

Sir Leonard Owen, managing director, industrial group of the U. K. Atomic Energy Authority, urged an Anglo-American exchange of information on gaseous diffusion technology last month in an interview with NUCLEONICS. "I don't know why we don't swap gaseous-diffusion information," he remarked. "It would be of great technical interest to learn how you handle the problems—for us to have a look at your plants and for your people to have a look at ours."

Belgians Design 240-Mw(e) Water Reactor

Ateliers de Constructions Electriques de Charleroi and Cockerill-Ougree, two leading Belgian nuclear firms, are putting the finishing design touches on a 240-Mw(e), pressurized-water reactor for possible sale to Belgian utilities. Reactor design calls for slightly enriched U-oxide pellets in tubular stainless-steel cladding. The fuel elements would be manufactured by Belgium's new nuclear fuel company—Societé de Métallurgie et de Mécanique Nucléaire (NU, Oct. '58, 133). A smaller version of the reactor is one of nine reactor proposals submitted to the Belgian-Dutch sponsors of a 150-Mw(e) reactor projected for construction at Mol.

British Expect Big Advances in AGR

The advanced gas-cooled reactor being built at Windscale will have a power output per ton of fuel more than three times the most advanced nuclear station now under construction in the U. K., Sir John Cockcroft of the UKAEA told a Danish audience of civil engineers last month. Other vital statistics of the new Windscale reactor: 100-Mw(th) and 28-Mw(e) capacity; U-oxide fuel enriched 1.2%; operating temperature 200° C higher than present stations, or between 600–700° C; and indicated burnup of the fuel elements—25,000 Mwd/ton.

West Germany Studying New Reactor Financing

Discussions are under way in Bonn on changing the government's financial aid system for nuclear power plants—reducing the government construction outlay but increasing its share of risk capital for operation. The tax exemption of the present system would be scrapped but the government would shoulder 50% of development and design costs, then guarantee capital loans and offer to absorb some of the excess operating costs over a conventional plant. The present tax exemption amounts to government subsidy of one-third of construction costs.

AMF Licensed to Ship Austrian Reactor

AEC has licensed American Machine & Foundry to export the 5-Mw(th) tank-type research reactor ordered by the Austrian Study Group for Atomic Energy (NU, June '58, 26). To be erected near Vienna, the reactor will be completed late next year.

Four-man Canadian Team Advises Japan on D_2O

Atomic Energy of Canada has sent a four-man team of physicists and engineers to the Japan Atomic Energy Research Institute, Tokyo, to give technical advice on a heavy water-moderated reactor of Japanese design. The team was expected to stay for two weeks, returning home late last month.

Geneva Triga Bound for Congo

General Dynamics has sold the Triga research reactor it exhibited at Geneva to the Univ. of Lovanium at Leopoldville, Belgian Congo—Africa's first reactor.

Reactors Near Madrid, Hamburg Go Critical

Spain's first nuclear reactor, a 3-Mw(th) research unit, went critical Oct. 10 at its Moncloa site near Madrid; it was supplied by General Electric to the Junta de Energia Nuclear, Spain's atomic energy board. Full-power operation was expected by early November. Meanwhile, the $3-million, 5-Mw(th) Babcock & Wilcox pool at Geesthacht near Hamburg also went into operation. Its owners, the Society for Nuclear Energy Utilization in Shipbuilding and Shipping (NU, Nov. '57, 87), are now planning purchase of a 50-Mw(th) prototype ship propulsion reactor.

Russians Working on Atomic Locomotive

The Hungarian newspaper *Magyar Ifjusag* claimed last month that Russia will operate its first nuclear-powered locomotive in the early '60's but the claim was hedged with an unusually broad target-date range—some time between 1960 and 1965. The locomotive would pull a train at 310-mph top speed, the paper said, on either the Pacific-Baltic or Pacific-Polar Sea run; it would be able to cross the Soviet continent twice before refuelling.

Vickers-Armstrong Handling 3 Research Reactors

A British firm which entered the nuclear field only two years ago—Vickers-Armstrong, Ltd.—is building two research reactors for the UKAEA at Harwell and is designing a third for Harwell. The company refused to give details of any of the reactors but indicated, when it announced its entry into the field in 1956, that it would concentrate on marine plants. The reactors under construction are being built at an aircraft assembly plant which will be switched entirely to nuclear work in about 18 months.

U. S. Works Out Bilateral with Venezuela . . .

Venezuela and the U. S. have laid the groundwork for limited atomic power development in oil-rich Venezuela but it may be some time before the development becomes a reality. The two nations signed a 20-year power and research bilateral agreement on Oct. 8, with the U. S. agreeing to make available up to 800 kg of contained U^{235} at no more than 20% enrichment for use in three 15-Mw(e) boiling reactors. However, State Dept. officials said the reactors have not reached even the planning stage and that there are no immediate plans for construction.

. . . and Amends Bilateral with Japan

The U. S.-Japanese power-research bilateral has been amended in three respects: 1. the U. S. has increased its commitment for supply of plutonium from 10 gm to 260 gm (250 in the form of fabricated foils and sources); 2. fuel shipped from the U. S. for research and materials testing reactors may be enriched up to 90% (20% formerly); and 3. nuclear by-products purchased back from the Japanese must be used only for peaceful purposes. The amendments are subject to ratification by the Japanese Diet.

Small Test Reactor Projected by German Company

Siemens-Schuckertwerke, Berlin-Erlangen, West Germany, will build a 100-watt training reactor in Munich-Garching. It will be a Siemens-modified version of the Argonaut—entirely German-built.

News in Brief

AEC Staff Works Out Third Indemnity Formula

Holding a large bear by the tail, AEC's reactor indemnity staff came up last month with its third proposed indemnity formula in a year; this latest, authored by the reactor hazards branch, was being circulated among the staff preparatory to sounding out the reactor and insurance industries on its feasibility. The problem with the new proposal—as with the first two which have been discarded as unworkable—is the inherent difficulty of working out a formula for both large and small reactors, according to AEC officials. Until a workable formula is found, AEC cannot complete its permanent regulations under the Price-Anderson Act for federal indemnity of reactors. Meanwhile, AEC went ahead with two less difficult regulations under the Act, giving industry an extra month—until Oct. 31—to comment on: 1. The proposed form for indemnifying licensees; and 2. the insurance forms of two commercial pools (NU, Oct. '58, 31).

JCAE Watchdogging Budget Bureau Treatment of AEC

The Joint Committee on Atomic Energy, trying to stave off a repetition of the AEC budget crisis of a year ago (NU, Jan. '58, 17), has asked AEC to submit monthly reports covering Budget Bureau apportionment of funds for major research and reactor projects. The first report went to JCAE in mid-October, showed on-schedule apportionment for all but three research items: 1. the medium-flux reactor for Brookhaven (design study); 2. the CP-5' research and engineering reactor for Argonne (design study); and 3. a new central lab and addition at Oak Ridge. All of these have been delayed within AEC, however; the Budget Bureau has been releasing all AEC funds as they have been requested for the current fiscal year.

MA Ready to Present Nuclear Ship Plan to Congress

Maritime Administrator Clarence Morse announced formally last month that MA will go to Congress early next year for authority to subsidize a nuclear tanker construction program (NU, June '58, 20). MA wants permission to share 50–50 with a nuclear ship operator the difference between the building cost of a conventional tanker and a nuclear tanker. If the idea is approved during the next session, MA will request immediate appropriation of its expenses under the program during the year beginning July 1. At least three oil companies are ready to build, Morse said. He also outlined tentative MA plans to build a nuclear powered submarine tanker in fiscal year beginning July 1, 1960; the ship would be 20,000 deadweight tons, 530 ft long, 85 ft wide and 20 knots in speed.

Southern Governors Create Regional Compact, Council

In what was both a defensive and offensive move, the 10 member states of the Southern Governors' Conference have created the nation's first regional compact on nuclear energy. Defensively, it is aimed at securing states rights in the regulation of nuclear industry; offensively, it is aimed at making the region more attractive to nuclear firms. The compact will be drafted by the southern regional advisory council on nuclear energy, which was given permanent status and a two-year budget when the compact was agreed on in late September. The council has been charged with drafting the compact in time to permit member legislatures to vote on it during 1959.

Fluor Gets Contract to Complete Calcination System

Fluor Corp.'s $300,000 contract with AEC to cover preliminary construction work on a waste calcination system at the National Reactor Testing Station has been increased to $3,300,000 to carry the project through to completion by February, 1960 (NU, Aug. '58, 27).

Connecticut Town Protests Disposal License

The first controversy over the issuance of an AEC license for the collection and disposal of radioactive materials has developed in Portland, Conn. The license application of Walker Trucking Co.—for collection and storage of radioactive wastes in Portland and eventual disposal at sea—has been formally protested by the Board of Selectmen of the City of Portland, on behalf of itself and several local oil companies. The Board's accusation that the storage area is too small to provide proper protection from radiation was answered last month by Walker, which rejoined that the Board had no standing to protest. AEC's legal staff has taken the position that the issues are not clear and has asked for a prehearing conference before AEC Examiner Samuel Jensch. A hearing will be held Nov. 19 in Hartford.

Wyoming U Firms Agree on Mill Expansion Formula

Eight uranium companies, jockeying for position in the construction of new milling capacity in the Gas Hills district of Wyoming, have reached an agreement which would bring construction of two new mills and expansion of three others. Subject to okay by AEC, the following would take place: a 522 tons per day mill built by Federal Uranium; a 492 tpd mill built by Union Carbide Nuclear; expansion of Western Nuclear's mill from 440 to 845 tpd; expansion of Lucky Mc's mill from 825 to 1,002 tpd; expansion of Fremont Minerals' mill from 550 to 724 tpd; and assignment of allocations in three of the mills to Vitro Uranium, Green Mountain Uranium and Lisbon Uranium. Total milling capacity for the district would be upped from 1,770 to 3,585 tpd through Dec. 31, 1966.

NBS Completes 10 of 15 U Standards; To Tackle Pu, Th

The National Bureau of Standards has prepared the first ten of fifteen uranium-isotope standards for use by industry and institutions in the U. S. and abroad. Standards for plutonium and thorium will be made available under a continuing program for providing materials of known certified composition accepted universally as analytical standards. The ten U standards available since Oct. 1 are at these levels (wt % U^{235}): 0.5, 1, 1.5, 2, 3, 5, 20, 85, 90 and 93; five others are under preparation at 10, 15, 35, 75 and 80. A natural U chemical standard, also available now, rounds out the U series.

Radiology on Ground, in Air

A $270,000 statewide radiological health program has been proposed by the California State Health Dept. as part of its annual budget. The proposal includes the employment of technical personnel, purchase of lab and field monitoring equipment and establishment of a surveillance program. . . . AEC, in cooperation with the U. S. Geological survey, has started an aerial radiological survey of major nuclear production and reactor facilities, plus the Nevada test site. Purpose: to further understanding of long-term, low-level radiation effects and appraise level changes stemming from bomb tests and plant operation.

ALSO OF NOTE . . .

First A1W Critical

The first of the two A1W reactors of the Large Ship Reactor facility, land-based prototype for the two-reactor cruiser *Long Beach* and the eight-reactor aircraft carrier *Enterprise*, went critical at the National Reactor Testing Station in Idaho, Oct. 21. All twelve are to be Westinghouse pressurized-water reactors. The prototype will test out for the first time the dynamics of two reactors on one propeller shaft. Newport News Shipbuilding & Dry Dock Co., builder of *Enterprise*, built the simulated hull in Idaho (photo NU, Sept. '57, 26).

First Destroyer Ordered

Meanwhile Bethlehem Steel Co., builder of *Long Beach* at its Fore River Shipyard, received a contract for design and construction of the first nuclear-powered destroyer (NU, Jan. '58, 22), now grown to 7,600 tons displacement and consequently reclassed a frigate by the Navy. To cost a maximum of $10-million, she is to be delivered in January, 1962.

Tingey Lost

At the same Bethlehem Steel suffered a painful blow: Richard H. Tingey, 52, manager of its big nuclear power department, is missing since Sept. 6 and was apparently lost at sea while sailing his 38-ft sloop alone off Duxbury, Mass. He is the third prominent atomic figure to meet a violent death in seven months, following Donald Kallman (NU, March '58, 28) and Gordon Dean (NU, Sept. '58, 153).

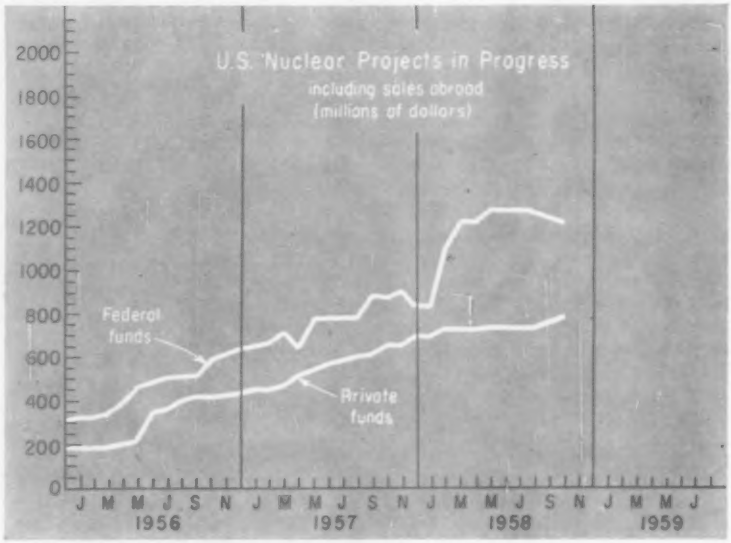
Second Windscale Scrapped

For economic reasons, Windscale No. 2 plutonium pile, shut down since the accident last Oct. 10 in No. 1 reactor (NU, Nov. '58, 26 & 130), will not be started up again. Cost of re-equipping and re-instrumenting the unit to meet recommended safety standards would be $1.5-million.

Accident in Yugoslavia

Six Yugoslav nuclear workers, several in critical condition, were flown to Paris for treatment after radiation overexposure at the Boris Kidric Nuclear Energy Institute near Belgrade. Government investigators found "insufficiently qualified staff" had been in charge of the reactor involved; they charged "lack of vigilance and carelessness" and removal of safety appliances were at fault.

NUCLEONICS Statistics of the Month



	Latest month	Month ago	Year ago
Nuclear Contracts *—			
Contracts awarded for federal projects ($10³)	12,043	3,638	10,846
Proposed construction, privately-owned ($10³)	0	0	0
Contracts awarded, private work ($10³)	0	4,375	1,750
Backlog of private projects ($10⁶)	249	249	227
Access Permits †—			
Access permits issued	6	18	18
Total access permit holders	1,419	1,432	1,372
Isotope Use †—			
Applications for isotope use	540	548	366
Cumulative total of isotope users	4,236	4,089	3,506
ORNL shipments (curies)	20,642	17,618	11,784
Public and private export shipments	112	272	94
Employment †—			
AEC employment	6,972	7,005	6,853
Construction and design contractors' employment	10,780	9,985	12,357
Total operating contractors' employment	104,502	103,686	99,477
Production workers	51,119	51,144	50,619
Research and development employees	47,153	46,177	42,296
Miscellaneous workers	6,230	6,365	6,562

U. S.-built Reactors ‡—

	Operating	Building	Contracted
Power, domestic	1	6	8
Power, for export	0	1	2
Power experiments and pilot plants	7	4	1
Military and naval	5	23	12
Research and test, domestic	47	22	39
Research and test, for export	8	13	9
Foreign-built Reactors ‡—			
Power, domestic	6	23	10
Power, for export	0	1	2
Research and test, domestic	29	13	10
Research and test, for export	6	6	1

* From *Construction Daily*, a McGraw-Hill periodical † From AEC ‡ NUCLEONICS figures

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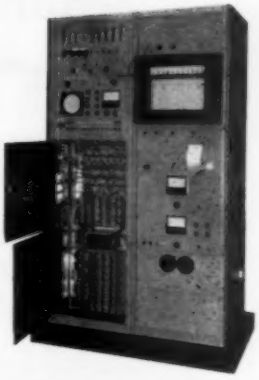

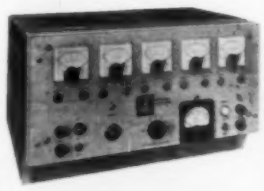

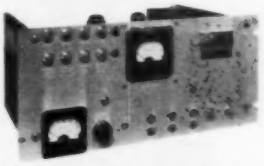

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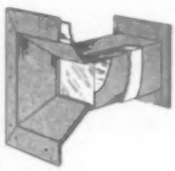

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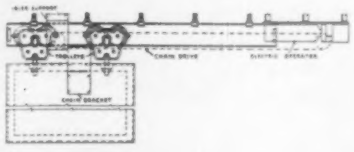

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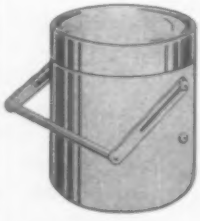

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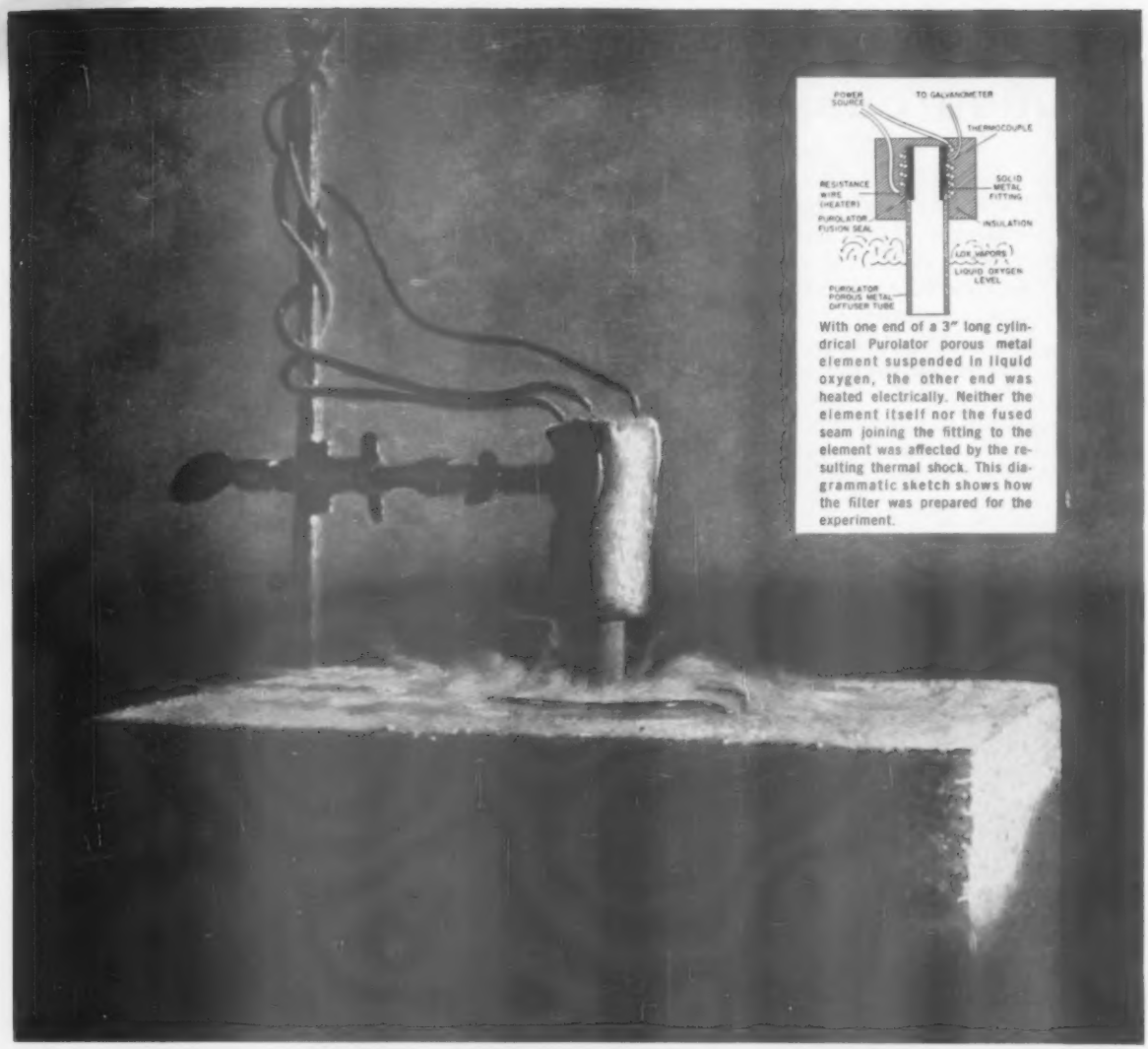

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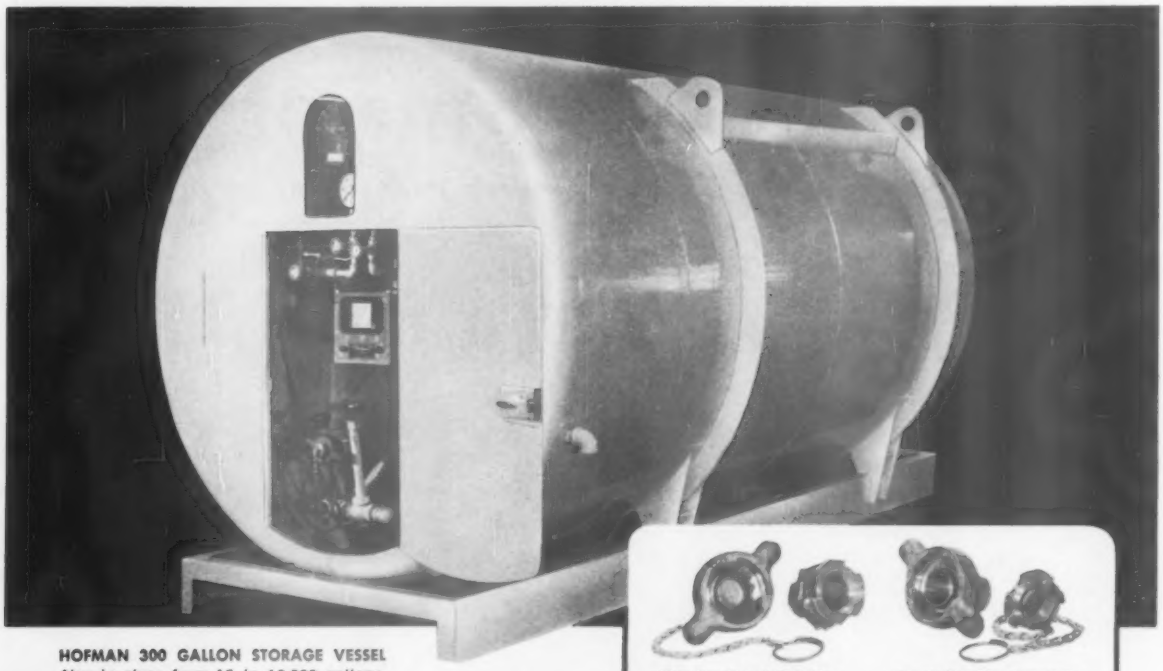

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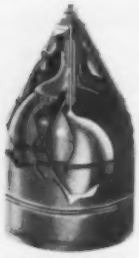

HELIUM STORAGE CONTAINER
All copper, 4 wall container. Capacity 10 to 100 liters.

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Provides easy viewing of sample and easy access to sample holder.

FREE!

16 PAGE CATALOG
Contains technical information . . . shows complete line.

For low temperature apparatus of the highest efficiency and structural strength, Hofman Laboratories is your best source. Hofman has a large line of standard equipment ready for rapid delivery or will build special apparatus to your specifications. Whether your requirements are for large-tonnage units or small "lab" vessels, contact Hofman.

Typical users of Hofman low temperature vessels include U. S. Bureau of Standards, Naval Research Laboratories, North American Aviation, Douglas Aircraft Co., Convair, the nation's leading universities, and government and industrial laboratories.

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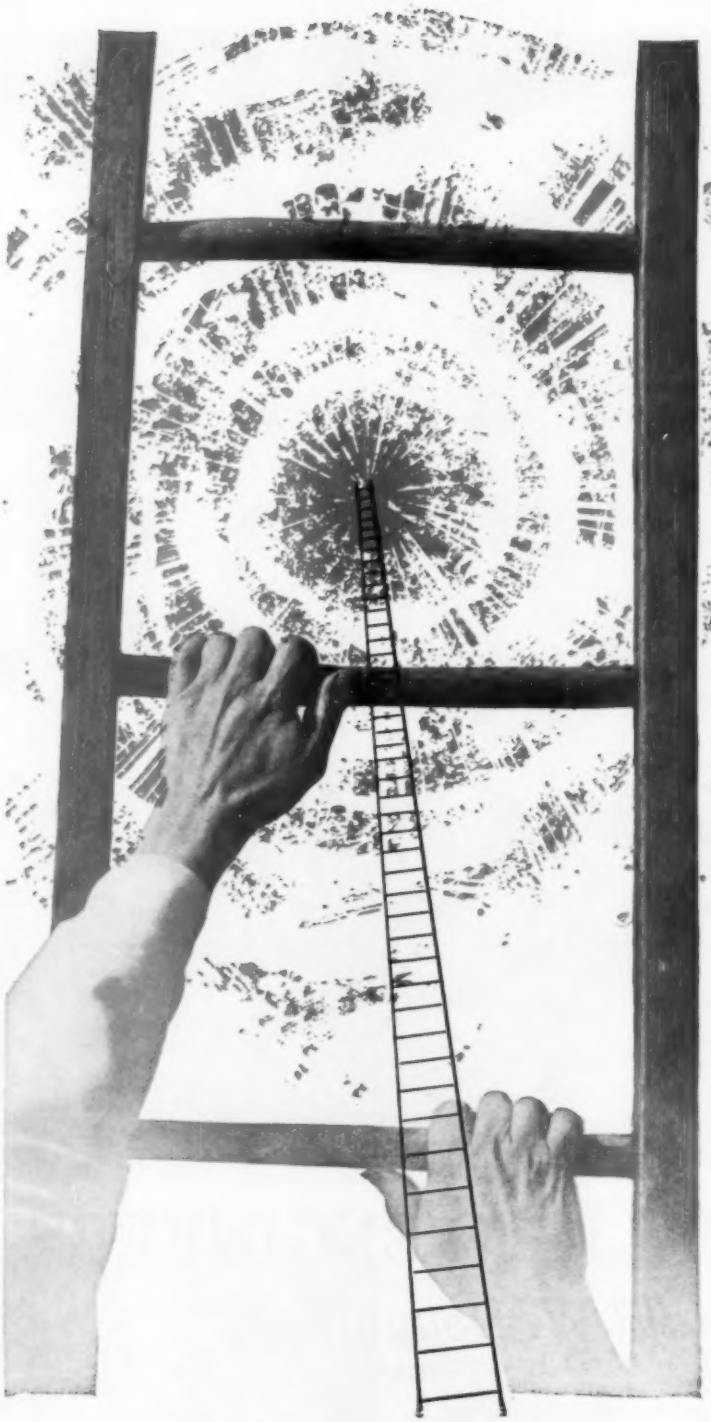
OVERSEAS AGENT — AIRCO CO., International Div., 60 E. 42nd St., New York City



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RADIOGRAPHIC, FLUOROSCOPIC AND CINEFLUOROGRAPHIC EQUIPMENT FOR DIAGNOSIS

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Capsuled above are some ramifications of the radiation facilities Picker places at your service. Any local Picker Office (there's probably one near you) will be glad to work with you concerning any phase of these operations.
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25 So. B'way, White Plains, N. Y.

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if it has to do with *radiation* it has to do with PICKER

If you're concerned with Nuclear Medicine, you'll find rewarding reading in our periodic Technical Letter—the Picker *"Scintillator."* Write us for sample issues: they're free for the asking. Maybe you'll want to be put on the mailing list?

STRAIGHT TALK TO ENGINEERS

from Donald W. Douglas, Jr.

President, Douglas Aircraft Company

In this fast-moving age we find that we can no longer insure leadership... or even survival... by doing things the traditional way. If there's a better way, we must find it.

Our DC-8, C-133, Thor, Nike-Hercules, Genie, Sparrow and other aircraft and missiles are all the finest of their type and time. But their success, and that of our many new projects, depends on superior engineering.

That's why I'm looking for engineers dedicated to quality work. Only through such dedication can the extra performance and reliability of our products be attained. If you feel as we do about this principle, we'd certainly like to discuss a future at Douglas for you.

Write to Mr. C. C. LaVene,
Douglas Aircraft Company, Box L-620
Santa Monica, California

At General Electric . . .

- **Reactor operating results**
- **$20,000,000 nuclear center**
- **3500 man-years of atomic experience**

LEAD THE WAY IN ATOMIC PROGRESS

Operating results—Vallecitos Boiling Water Reactor.

Experienced personnel—3500 man-years.

$20,000,000 integrated research and plant facilities.

Leadership in the nuclear field is gained from outstanding designs, facilities, and personnel, together with reactor operating experience. Toward this end, General Electric's Atomic Power Equipment Department has designed and built a wide range of power and research reactors, notably the Vallecitos Boiling Water Reactor. It has completed a $20,000,000 integrated nuclear facility, including its headquarters engineering and manufacturing center at San Jose, California and the Vallecitos Atomic Laboratory, near Pleasanton, California.

The facility is staffed by highly experienced scientists, engineers and technicians with a combined total of 3500 man-years of nuclear experience.

BROAD LINE OF PRODUCTS AND SERVICES offered by General Electric includes:

Power reactors—for electric-generating plants and ship propulsion featuring boiling water reactors.

Research and test reactors—for all research, industrial and educational applications, featuring the Open Pool Research Reactor, Pool Training Reactors, and the General Electric Test Reactor.

Fuel—for power and research reactors, including plate-type and rod-type elements.

Components—including control-rod drives, instrumentation, servicing equipment, and liquid-metal equipment.

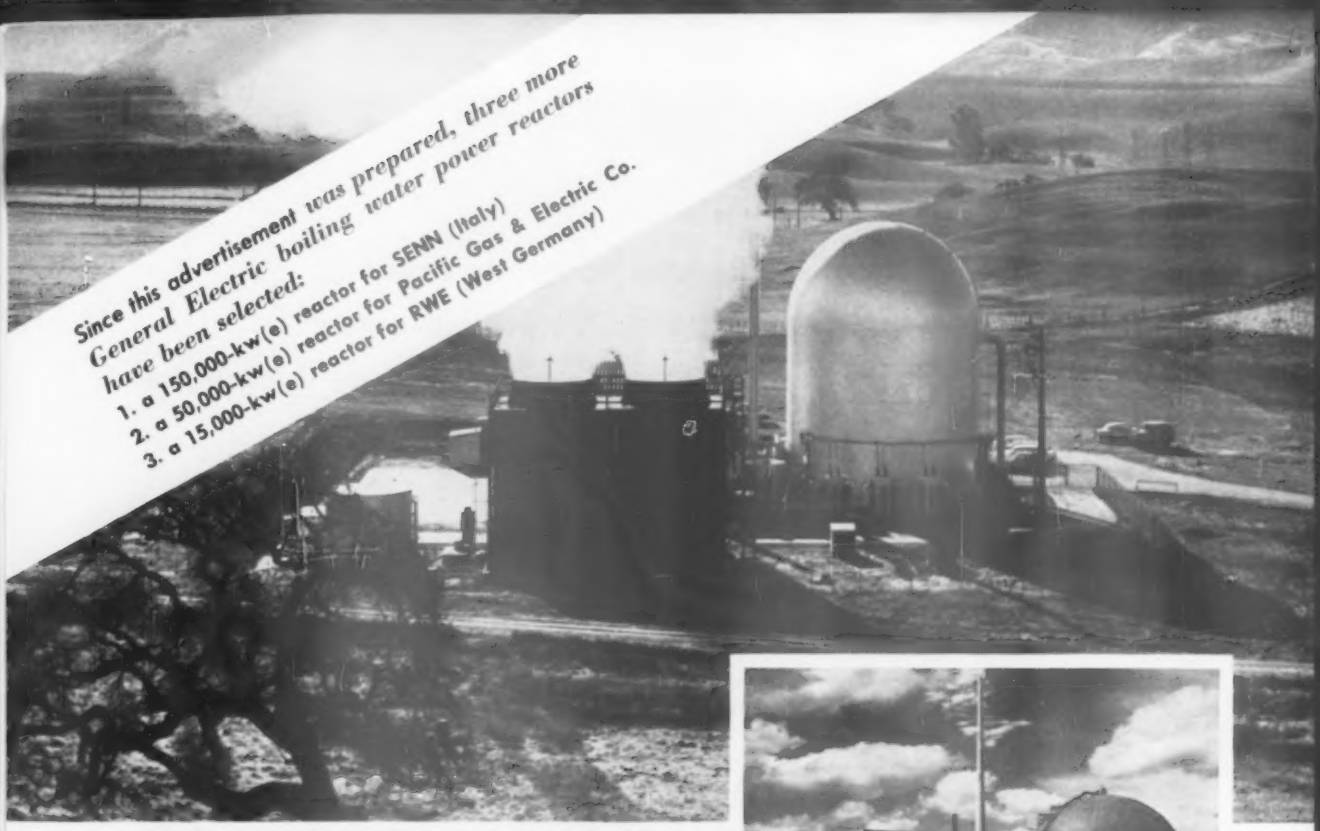
Laboratory services—including irradiation space in the GETR, VBWR, and the Radioactive Materials Laboratory.

Development studies—including advanced reactor design studies in boiling water and other reactor technologies, fuel studies, and physics investigations.

196-13

FOR MORE INFORMATION SEE NEXT TWO PAGES

GENERAL ELECTRIC


Since this advertisement was prepared, three more
General Electric boiling water power reactors
have been selected:
1. a 150,000-kw(e) reactor for SENN (Italy)
2. a 50,000-kw(e) reactor for Pacific Gas & Electric Co.
3. a 15,000-kw(e) reactor for RWE (West Germany)

Vallecitos Boiling Water Reactor in operation on cool California morning with condenser-circulating-water vapor rising from cooling tower. Inset—Dresden station, largest U. S. all-nuclear plant, nears completion.

VBWR operation, Dresden design experience, prove potential for...

LOW-COST NUCLEAR POWER

THE VALLECITOS BOILING WATER REACTOR at General Electric's Vallecitos Atomic Laboratory has shown, through over a year of test operations, the great potential of the boiling water reactor for producing economical nuclear-electric power in the near future. Power has recently been increased by 50 percent—from 20,000-kw(t) to 30,000-kw (t)—and an application has been made for a license to operate at 50,000-kw(t).

The VBWR has been supplying the United States' first privately financed atomic-electric power since October 1957, in conjunction with the Pacific Gas and Electric Company.

Operation of the VBWR has shown the direct-cycle boiling water reactor design to have:

- **greater power potential than contemplated**
- **rapid load response**
- **negligible radioactivity carryover allowing direct-contact maintenance on turbine**
- **stability of operation over all pressure and thermal outputs.**

Primary purpose of the VBWR is to obtain operational experience applicable to the Dresden Nuclear Station, the largest all-nuclear plant scheduled in the United States. The Dresden station, rated at 180,000 kw(e) net, will have a G-E dual-cycle boiling water reactor. The station will provide electric power in the Chicago area in 1960.

If its fuel elements were to be redesigned, yet keeping the same core size, this same boiling water reactor plant would have a potential of 245,000 kw (e) net. For a similar system with increased pumping, turbine-generator unit and auxiliary, the potential would be 300,000 kw(e) net.

GENERAL ELECTRIC

First fuel element for Dresden station, country's largest all-nuclear power plant, being shipped.

General Electric now ready to serve all your atomic needs with a $20,000,000 facility

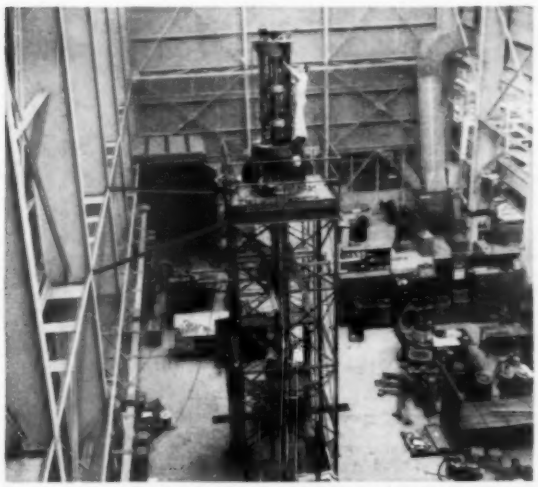
General Electric's commercial atomic facilities are ready to help you with the application and technical advancement of atomic energy. Manned by a top technical staff, the engineering and manufacturing facilities at San Jose, California include general manufacturing, fuel fabrication and special testing areas.

A new mechanized production line reduces costs and provides optimum quality control for rod-type fuel elements. G-E plate-type fuel elements are made with a new pressure-bonding process which eliminates welding or brazing.

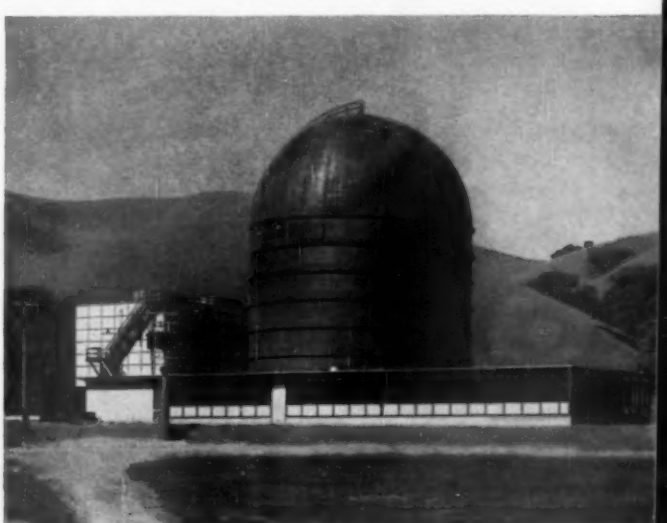
The Vallecitos Atomic Laboratory is a completely equipped commercial facility devoted entirely to nuclear investigation and experiment. Services include nuclear materials studies, hot-cell work, physics and radio-chemistry studies, and materials irradiation testing in the General Electric Test Reactor and the Vallecitos Boiling Water Reactor.

Take advantage of General Electric know-how in the atomic field. Call your nearest Apparatus Sales Office or write to: Atomic Power Equipment Department, General Electric Co., San Jose, California. Outside the USA and Canada, write to International General Electric Co., 150 East 42nd St., New York 17, N. Y.

Open-pool research reactor assembled for low-power operating tests before shipment to Spain.



Remote fuel-handling mechanism is example of sub-systems manufactured for other major reactor projects.



General Electric Test Reactor, scheduled to be first private test reactor in operation, has irradiation space available for use by industry. **Rating is 30,000 kw(t).**

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MODEL SS-2

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IN SRE... Zallea expansion joints absorb thermal expansion of reactor core tank and outer tank

The very nature of the Sodium Reactor Experiment, conducted by Atomics International for the AEC, and the method of handling the liquid sodium reactor coolant demand reliability in expansion joints. Because of the operation there can be no compromise in design or quality.

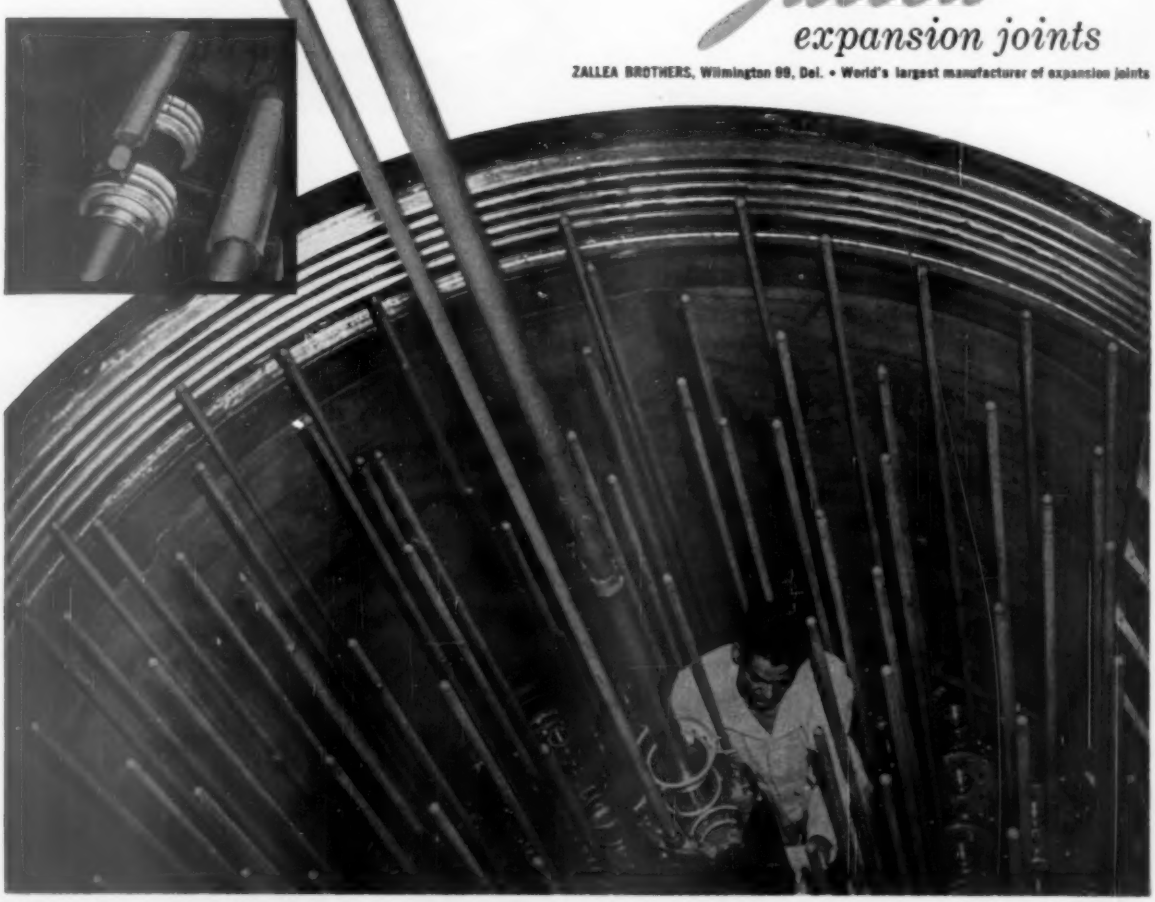
The high temperature SRE uses Zallea Expansion Joints where thermal expansion must be absorbed and where a gas seal must be maintained. An 11-ft. diameter Zallea Expansion Joint at the top of the outer tank absorbs the expansion that results from the temperature increase in these components as the reactor comes up to operating temperature, 960°F. In addition, the expansion joints form a seal for the helium gas and sodium vapor above the sodium pool at the top of the reactor as well as for the helium gas within the outer tank.

In the sodium coolant piping circuit gas seals are effected by means of Zallea Expansion Joints in the region where the pipes leave the reactor cavity and enter the pipe galleries.

Zallea has worked with almost every major engineering and manufacturing firm engaged in atomic, nuclear and missile work—and has provided the large majority of expansion joints for such projects. As a result, we have accumulated a store of expansion joint engineering data and manufacturing skills that cannot be equalled. Whenever expansion is involved in piping systems, reactors, tanks—whatever the application—let our engineers work with you. We already have the answer to many of the difficulties you will encounter. And we welcome the chance of tackling your problem.

Zallea
expansion joints

ZALLEA BROTHERS, Wilmington 99, Del. • World's largest manufacturer of expansion joints



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Application Specialists Of Wear, Corrosion And Heat Resistant Overlays

CLEVELAND HARD FACING HF **Inc.**

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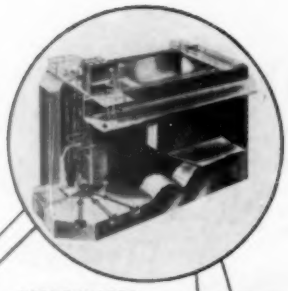
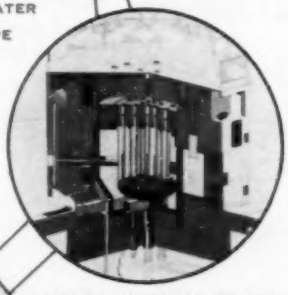
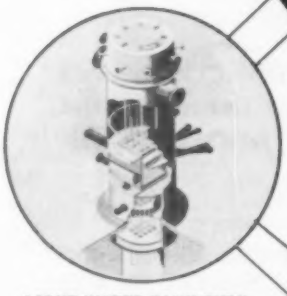


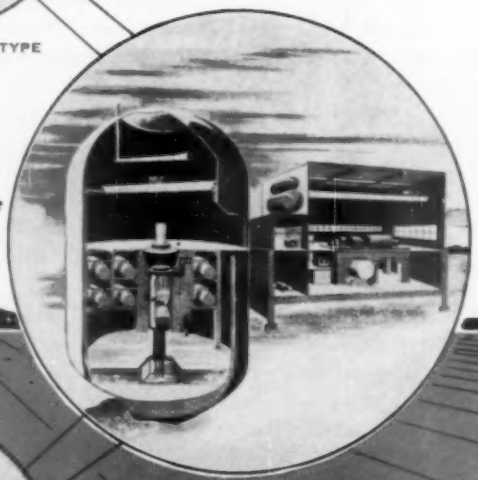
LIGHT WATER
POOL TYPE



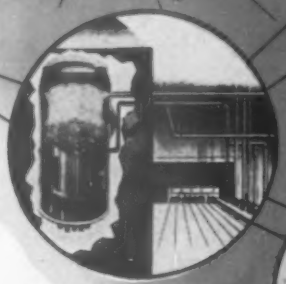
HEAVY WATER TANK TYPE



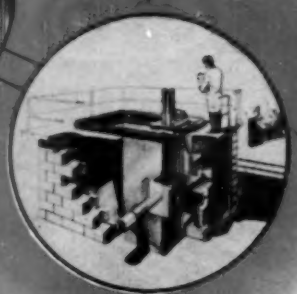
LIGHT WATER TANK TYPE



BOILING WATER POWER REACTOR



PROCESS HEAT REACTOR



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With a background of success in diverse reactor designs, ACF has acquired the experience and capabilities to solve your reactor problems. If your requirements extend beyond the scope of our "standard" designs, ACF will custom design a reactor to fit your specific needs.

ACF's services include:

- **Technical consultation**
- **Engineering and design**
- **Nuclear physics calculations**
- **Site investigation and preparation of hazards report**
- **Manufacture and test of all equipment and instrumentation**
- **Reactor installation and construction supervision**
- **Start-up supervision**
- **Operator training**

For more information on how ACF can help you solve your nuclear problems, write to:

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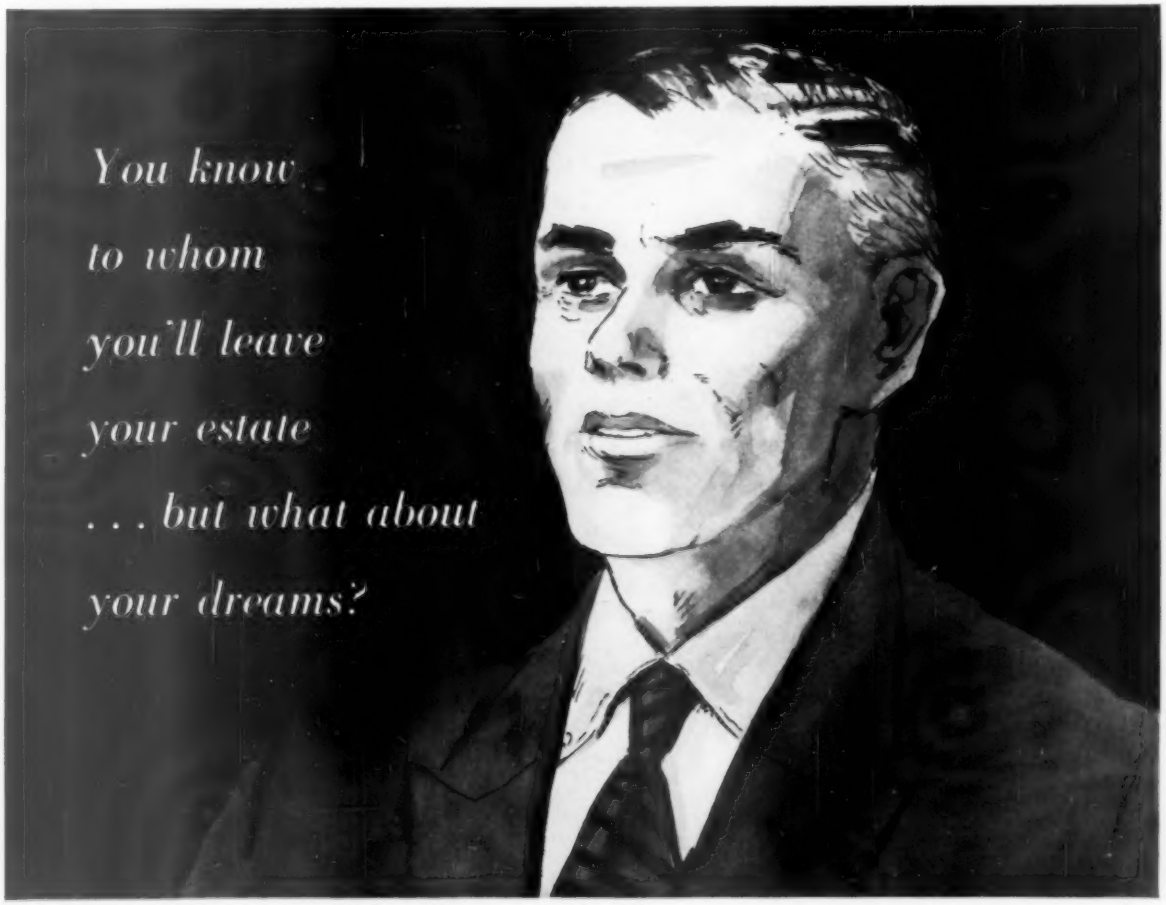

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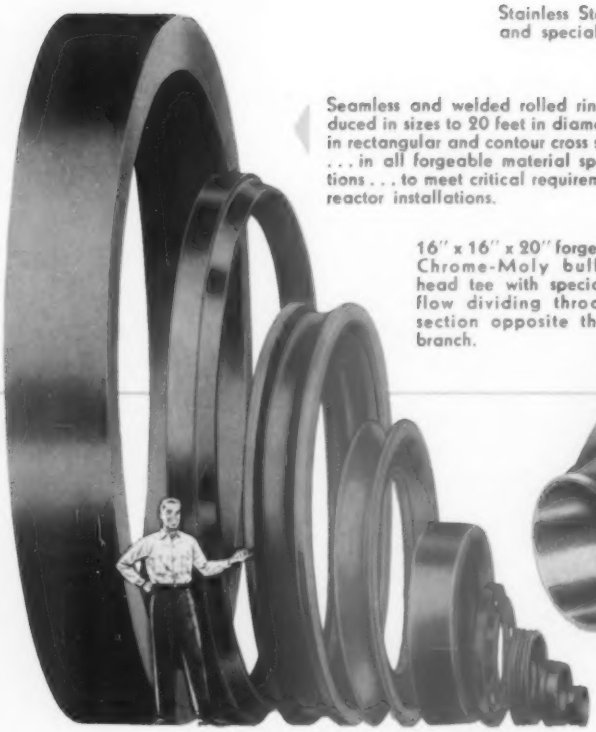
18" alloy steel elbows with 3.9" wall for extremely high pressure-temperature service.

Heavy wall laterals closed impression die forged of Stainless Steel in a variety of sizes.

Stainless Steel, heavy wall, reducing tee with extended run section.

Stainless Steel Elbow with heavy wall and special radius for nuclear service.



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16" x 16" x 20" forged Chrome-Moly bull-head tee with special flow dividing throat section opposite the branch.

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FOR NUCLEAR AND CONVENTIONAL POWER PIPING APPLICATIONS

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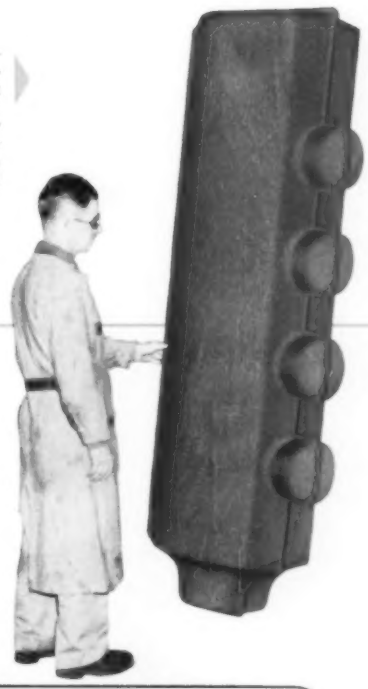
Largest closed impression die forging produced to date. Weight — 10,500 pounds . . . 316 Stainless Steel. For use in modern power plants operating at elevated pressures and temperatures.



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WELDING FITTINGS	ASA & MSS FLANGES	SCREWED and SOCKET FITTINGS and UNIONS	LONG NECK FLANGES	TEMA & LARGE O.D. FLANGES & ROLLED RINGS

your two best friends... "the man ahead" and "the man behind"

That man just ahead of you hopes you'll take his job away from him. He's plain selfish about it . . . that way you push him up the ladder, too.

The fellow right behind you, what about him? He's another good friend. Just help make him more capable of capturing your present spot . . . see, now he's pushing you!

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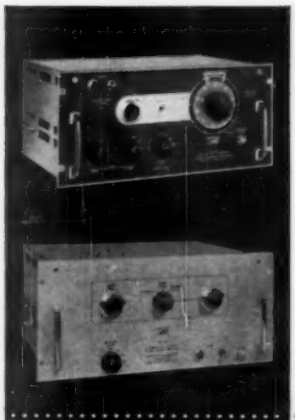
The most interesting reading for the man most interested in moving ahead

precision pulse height analysis



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Chase-Higinbotham non-overloading linear amplifier . . . Bell Francis window amplifier type pulse height analyzer.

Resolving time — 0.5 us.
Gain — 8000 maximum
Rise time — 0.15 us.
Stability of window — 1% in one volt window

The *Analyzer* section is available separately as a Model PA-1A Pulse Height Analyzer, the *Amplifier* section as a Model AL-4A Linear Amplifier.

MODEL PA-3B AMPLISORTER — provides 3 counting modes

Excellent for isotope monitoring, x-ray diffraction measurement, background reduction, etc. . . . uses the Chase Higinbotham non-overloading amplifier circuit along with a wide range differential-integral pulse height selector.

Counting modes:

(1) Integral — counts all pulses above baseline (0-100 volts)
(2) Differential, upper limit — counts pulses between lower and upper levels (each adjustable 0-100 volts)
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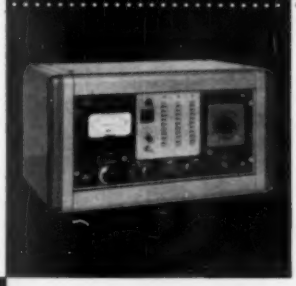
Gain — 8000 maximum
Rise time — 0.15 us.
Resolution, pair pulse — 2.5 us.
Linearity, discriminator — better than 1%

reliable scaling



MODEL SG-2A SCALER — includes linear amplifier, power supply. For use with Scintillation, Proportional and Geiger Counters . . . precision etched wire decade strips . . . dual-range 2500 volt power supply . . . non-overloading amplifier.

POWER SUPPLY — 300-1000V, 300-2500V ranges, stability — 2V on low range, 4V on high range. Regulation — less than 0.001% change for 1% line voltage change.

AMPLIFIER — Dynamic range 10,000 to 1 at 1 mv; Sensitivities — 1, 10, 100, mv, neg.; Rise time — 0.20 us.

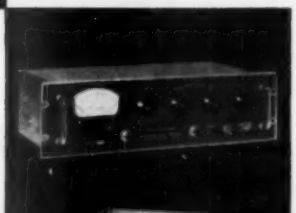
SCALER — Scale factors — 100, 1000; Max. scaling rate — 1,000,000 cpm; Counts to 240,000 cpm with less than 1% coincidence loss; Resolving time — 2.5 us.

All models supplied with auto-time; an all-electronic pre-set count is available on Model SG-2A4.

TMC

PRECISION INSTRUMENTS For RADIATION ANALYSIS

power source for scintillation counters



MODEL HV-4A ULTRA-STABLE 1600 VOLT POWER SUPPLY, for precision photomultiplier operation.

200 ppm/day stability . . . continuously variable output . . . no warm-up surge . . . dual output.

Stability — 0.02% per day

Range — 500 to 1600 volts continuous with 3 voltage controls — hundreds, tens, units.

Line Regulation 50 ppm for a 10% line voltage change

Panel Height — 5¼ in.

Where methane and other high voltage gases are used for counting, the Model HV-2C provides a stable *5000* volt supply.

complete recording spectrometer system

MODEL S-11 AUTOMATIC RECORDING SPECTROMETER — complete system includes:

Model PA-2A Amplisorter . . . Model 111 Preamplifier . . . HV-4A Power Supply . . . RM-1B ratemeter . . . Strip chart recorder

Provides:

- continuous scanning between baseline settings of 0 to 100 volts with 0.1% linearity (span = 18 inches paper travel)
- 8 scanning speeds — 7.5" — 240" per hour
- probable error selection — 1%, 3%, 10%

Other TMC Spectrometer Systems include the Model S-12 Manual Spectrometer and the Model S-13 Dual Peak Spectrometer.

liquid phosphor "soft beta" counting

MODEL LP-2A LIQUID PHOSPHOR COUNTER — accurate, simple operation Precision soft beta counting of C^{14}, H^3, S^{35}, etc. using coincidence counting with specially matched photomultipliers.

Detection — 2 refrigerated photomultipliers. Over-all electronic gain — 100,000, rise time — 0.15 us.

Analysis — fast coincidence pulse height analyzer

Readout — two precision decade scalers

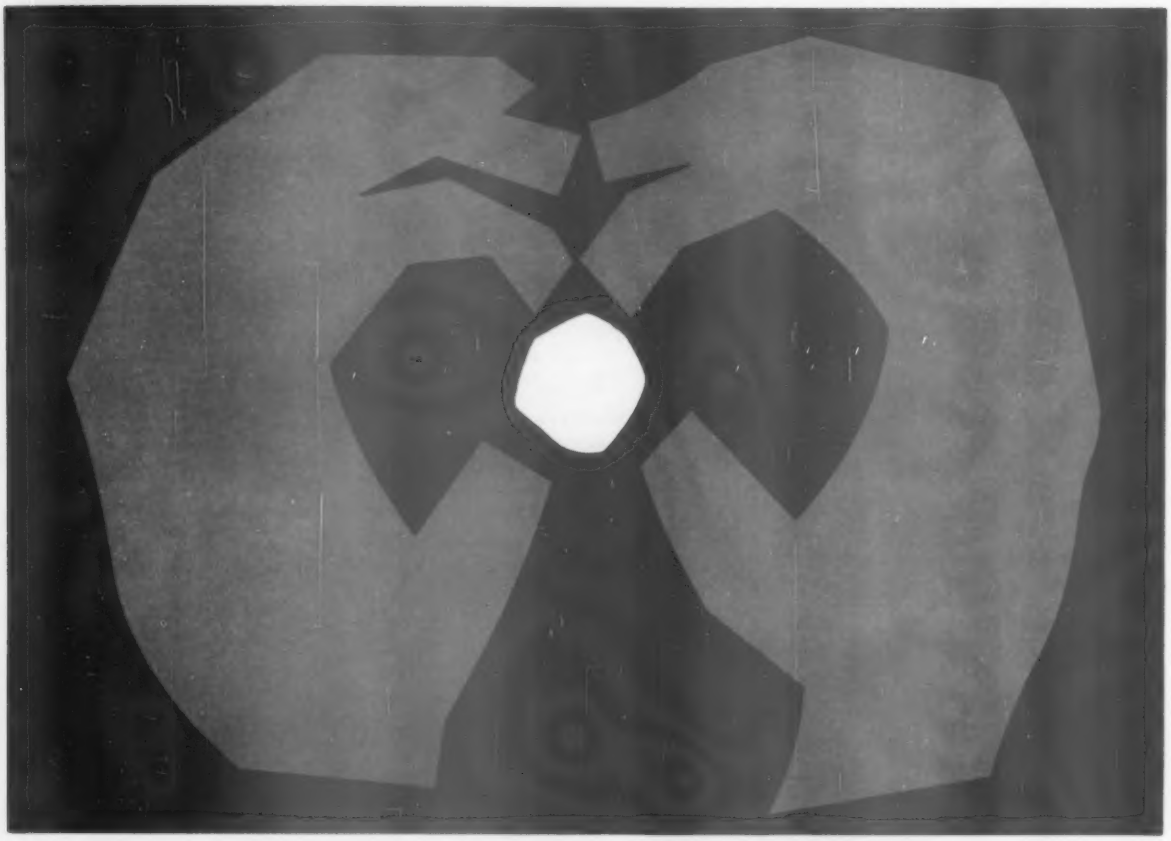
Power Supply — HV-4A stable 500-1600 volt, continuously variable output.

TMC INSTRUMENTS FOR RADIATION MEASUREMENT ALSO INCLUDE
Transistorized Magnetic Core Memory Multi-Channel Pulse Height Analyzers, Ratemeters, Detectors with Alpha, Beta and Gamma Caps; Well Scintillation Shields; Vapor Phase Counters.

Specific data on each instrument are available on request. Inquiries on system instrumentation for specific requirements are invited.

TMC **TECHNICAL MEASUREMENT CORPORATION**

441 WASHINGTON AVE., NORTH HAVEN, CONNECTICUT



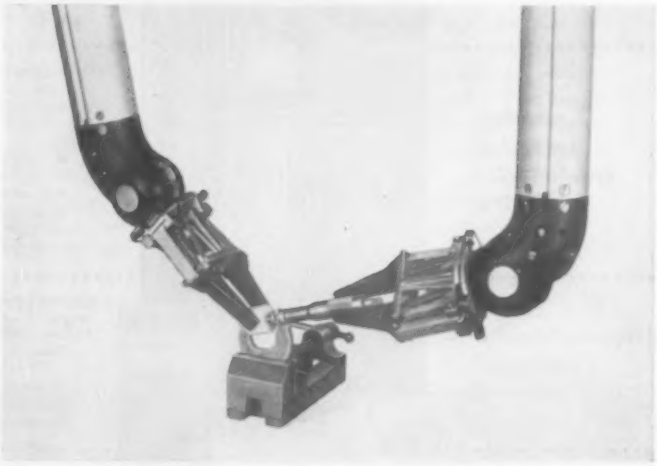
CRL manipulators...

AS OBEDIENT AS YOUR HAND!

Slave ends of CRL Manipulators obey perfectly—duplicate the natural motions of the operators' hands—make operation of the system amazingly simple. An operator becomes perfectly adept with practically no training.

Simplicity of operation is only one of several reasons research and production organizations all over the world specify CRL Manipulators. The system is versatile. Accessories such as special-purpose tongs, load hooks, motion locks, and protective booting allow adaption to a great variety of purposes. A continuous program of improvement . . . uncompromising workmanship . . . and standardized, interchangeable parts provide more reasons why you should consider CRL Manipulators for handling hazardous materials.

Central Research Laboratories will be glad to advise you on the handling of radioactive materials, explosives, hazardous chemicals, biological materials—in the layout of hot cells—in other research areas, too. For complete information, write CRL today.



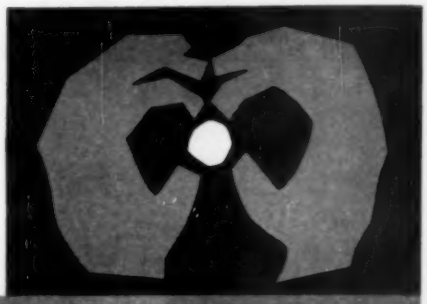
Central Research Manipulators from basic Argonne National Laboratory design

Central Research
laboratories, inc.
Red Wing, Minnesota, Dept. 108

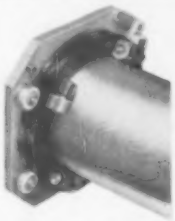
many new developments

INCREASE PERFORMANCE, RUGGEDNESS, RELIABILITY

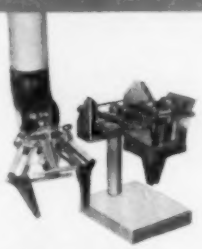
CRL manipulators... as obedient as your hand



Central Research Laboratories brings you important refinements in lateral rotation, azimuth assembly, wrist joint, tong, handle, roller mounts, load hook, and booting. Each is the result of CRL's continuing program to give you the finest in master-slave manipulators . . . manipulators which duplicate the natural motions of the operators' hand. Many of these improved features can be added to manipulators already in service. This program of improvement without obsolescence plus CRL's policy of immediate shipment on spare parts insures continued customer satisfaction.



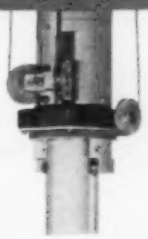
Improved *roller mount:* More rugged, more serviceable, less wear on through tube.



Improved *wrist joint, tong,* and *tong jig:* Greater protection of gears, more rugged, easier interchange.

Improved *handle:* More rugged, more satisfactory control of separation indexing and squeeze motion lock.

Improved *booting* and *load hook: Partial or* complete booting possible, load hook fits on booted or unbooted arm.

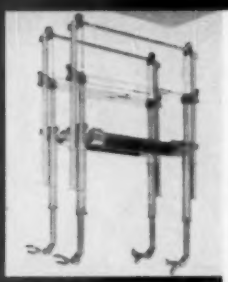


Improved *azimuth assembly:* Eliminates exposed rollers, provides greater "Z" motion or shorter collapsed length.

for thru-wall installation

CRL MODEL 8

Thru-wall installation for intermediate to high-level shielding. Separation indexing and lateral rotation keeps operator close to window with full visibility over large area. Easy to relocate —one man with a light crane can remove and relocate in less than five minutes.



for over-wall installation

CRL MODEL 4

General purpose — for installation over a barrier wall or through ceiling opening of protective enclosure.

for restricted-space installation

CRL MODEL 7

Space saving, light weight — for use in "junior caves" or over thin walls where minimum clearance and easy portability are important factors.

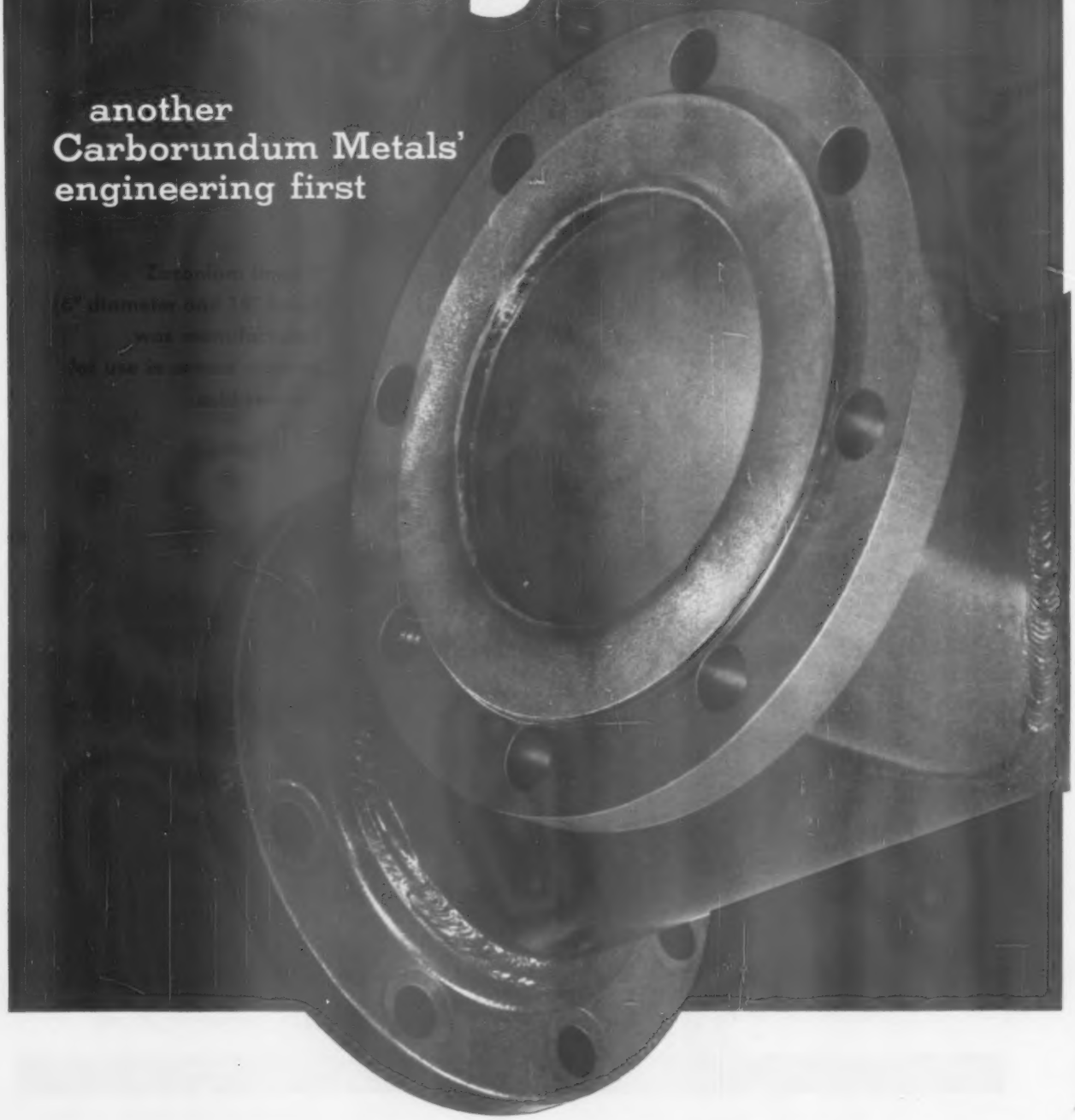
Central Research Manipulators from basic Argonne National Laboratory designs

write today for complete information to:

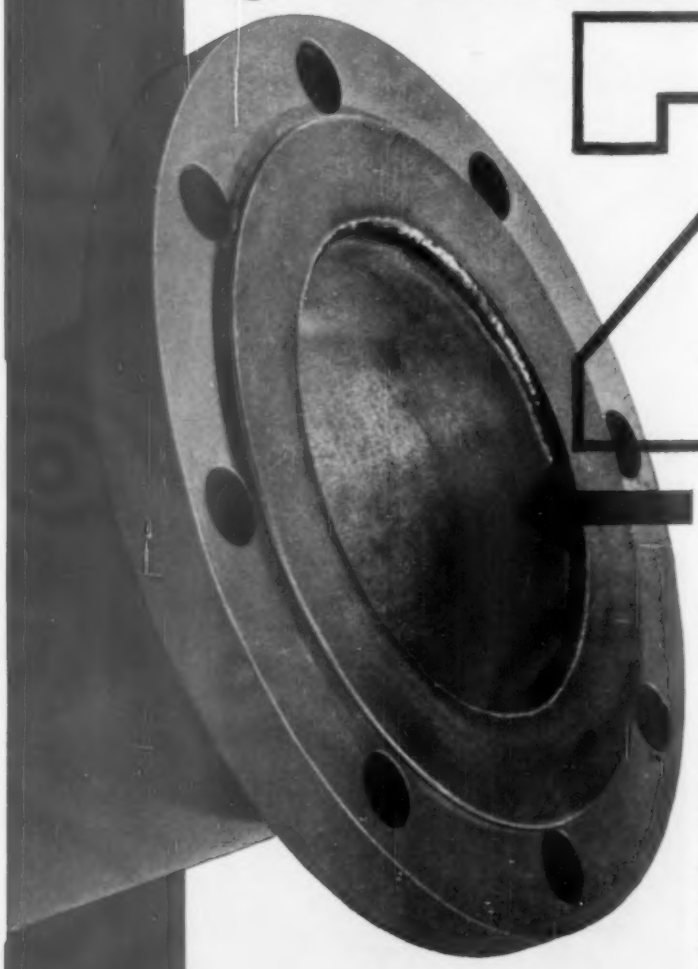
Central Research
laboratories, inc.
Red Wing, Minnesota, Dept. 169

this flanged "T"

another
Carborundum Metals'
engineering first



fights corrosion with economy



Zr

on the inside

(mild steel on the outside)

Zirconium liners are now available for a variety of basic processing components such as "T's", columns, tanks and reaction vessels. These liners provide all the versatile corrosion-resistance and outstanding nuclear properties of zirconium at surprisingly low cost. Rapid advances in zirconium manufacturing and fabrication techniques offer greater savings for:

THE NUCLEAR INDUSTRY

Zirconium's low neutron absorption and corrosion-resistance to coolants permits more economical fuel applications in almost every reactor design.

THE CHEMICAL PROCESSING INDUSTRY

Dual resistance to corrosion...zirconium protects against either strong acids or caustics. Versatility means interchangeability and longer lasting system components.

Carborundum Metals' fully integrated zirconium facilities and its close working relations with leading fabricators gives you *one* experienced source for every need in zirconium...from sponge metal to ready-for-service components. Firm quotations and delivery dates can be made immediately on commercial or nuclear grade sponge and ingot, and also on welded or seamless zirconium tubing, zirconium sheet, strip, bar, rod and foil.

Write today **for complete price schedules on all zirconium products.**
Address inquiries to Dept. 91-807.

THE CARBORUNDUM METALS COMPANY, Akron, N.Y.
Division of THE CARBORUNDUM COMPANY

Production Pioneer of ZIRCONIUM

CARBORUNDUM

91-807

CAST nuclear stainless steel valves and fittings now proved economical with superior strength

Cooper Alloy cast nuclear-service stainless steel valves and fittings are saving money, providing greater strength in AEC-contract plants today. Here's the story:

This Cooper Alloy stainless steel fitting for nuclear service, here being machined, possesses a yield strength of 26,000 psi at 650°F.—20% higher than values specified by code.

Cooper Alloy 16″ stainless steel gate valve body illustrates the wide range of nuclear valves and fittings now being cast by Cooper Alloy for atomic energy service.

YIELD STRENGTHS: CAST vs. FORGED STAINLESS STEEL

Cast Stainless Steel
SA351-CF8.....18,400 psi @ 650°F.(1)

Forged Stainless Steel
SA182-F8-304.....17,900 psi @ 650°F.(1)

Cooper Alloy Cast Stainless Steel
ASTM351-CF8.....22-27,000 psi @ 650°F.(2)

(1) Figures represent minimum yield strengths required by ASME Unfired Pressure Vessel Code, Section VIII, and have been calculated as follows:

$$YS = \frac{\text{allowable stress}}{62.5\%}$$

(2) Figures taken from tests of actual heats of material manufactured by Cooper Alloy for the AEC's SPERT III program at Idaho Falls, Idaho (see Nucleonics, Aug. '57).

Strength: As the figures in the accompanying chart show, Cooper Alloy is currently achieving what many have described as "the impossible": producing 304 ELC stainless cast valves and fittings consistently with yield strengths of 22-27,000 psi at 650°F.! These superior physical properties are finding wide application in meeting the exacting strength and economy demands of the nuclear industry.

How It's Done: These outstanding properties have been achieved by utilizing skills developed through Cooper Alloy's over 35 years of experience in casting stainless steel exclusively. In particular: • Use of proper directional solidification, achieved by proper mold design, plus foundry know-how in metal feeding, ensures a sound solid casting. • An exact balance of chemical composition develops the maximum strength characteristics inherent in the complex structure of stainless steel alloys. • Incorporation of foundry considerations into valve and fitting designs ensures maximization of the alloy's and the item's potential.

Quality Controls: In addition to all usual checks, such as 100% X-ray examination and dye-penetrant surface testing, all components are subjected to a 6,000 psi hydrostatic pressure test.

The Costs: Savings up to 40% have been achieved with sizes of fittings running from 8″—24″.

Want more information? Telephone or write the Nuclear Division, Cooper Alloy Corporation, Hillside, N. J.

COOPER ALLOY
Corporation • Hillside, New Jersey
THIRTY-FIVE YEARS OF STAINLESS STEEL PIONEERING

With the linear or toroidal pinch effect – an extremely high-temperature gas discharge at near vacuum – Consolidated's Systems Division is demonstrating a technique for producing temperatures in millions of degrees. This is one of CEC's newest nuclear instrumentation projects, which include uranium mass spectrometers, ion and neutron sources, isotope production, radiation data monitoring, and miniature research reactors. Write for the complete story in Bulletin CEC 3015-X3.

systems division **Consolidated Electrodynamics**

300 N. Sierra Madre Villa, Pasadena, California / Offices in Principal Cities Throughout the World

FOR EMPLOYMENT OPPORTUNITIES in this progressive company, write Director of Personnel.

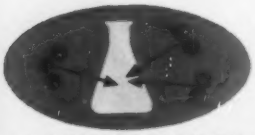
Consolidated's twelve-inch sector, and high-speed cycloidal (right), Mass Spectrometers are designed for studies of ion-molecule reactions and thermal emission of solids, appearance potential measurements, free radical research, and quantitative analysis of products of fast reactions.

NSEC puts radioactivity to work for you

Our business is radioactivity—applying it, measuring it, protecting against it. We serve not only the nuclear reactor field, but such diverse areas as chemicals, petroleum, pharmaceuticals, medicine, steel and coal.

With a heavy backlog of experience, NSEC's staff of prominent scientists and engineers can probably assist *your* business with research and development services, technical and support services, and consulting.

DEPARTMENTS AND SERVICES



CHEMISTRY

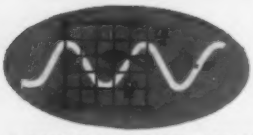
I. INDUSTRIAL APPLICATIONS OF RADIOACTIVITY TECHNIQUES
1. Solution of production problems
2. Process tracing and control
3. Product quality control
4. Water tracing
5. Oil field tracing

II. REACTOR TECHNOLOGY
1. Reactor coolant monitoring
2. Corrosion and radioactivity transport studies
3. Fission product release rates
4. Contamination and decontamination studies
5. Component efficiency studies
6. Fuel material integrity studies
7. Flux mapping and flux measuring
8. Development of custom dosimetry and analytical techniques

III. LABORATORY SERVICES
1. Sale of cyclotron-produced, carrier-free radioisotopes
2. Dosimetry
   - A. Thermal, epithermal and fast neutrons (1 to 10^{15} n/cm² sec.)
   - B. Reactor fuel burn-up
   - C. Gamma-dose measurements
3. Radiochemical Analyses
4. Low-level radioactivity assays
   - A. Environmental radioactivity, both natural and artificial
   - B. Tritium and Carbon-14
5. Neutron and charged particle activation analysis
6. Radioactive gas analysis
7. Deuterium measurements

IV. RESEARCH AND DEVELOPMENT PROGRAMS in related fields.

V. CONSULTING in related fields.



PHYSICS AND ENGINEERING

I. RESEARCH AND DEVELOPMENT
1. Basic problems in physics, metallurgy, chemical engineering
2. Specialized basic nuclear instruments and equipment

II. APPLICATION OF NUCLEAR TECHNIQUES TO:
1. Industrial processes (Mixing control, level and thickness controls)
2. Quality control inspection
3. Research problems

III. RADIOACTIVITY TRACING STUDIES
1. Gaseous or liquid tracing including industrial waste identification, sewage disposal, littoral drift
2. Dilution measurement of wastes

IV. RADIOACTIVE WASTE DISPOSAL SYSTEMS
1. Economic evaluation
2. Design studies
3. Process development

BIOLOGY AND MEDICINE

I. BIOMEDICAL APPLICATION OF TRACERS
1. Research and Development
   - A. Tracer experiments using radioactive isotopes in experimental animals
   - B. Determination of residues following crop dusting and feed supplementation
   - C. Testing of sustained release preparations
   - D. Tissue distribution of compounds
   - E. Determination of biological half-life of compounds
   - F. Quantitative measurement of traces of complex compounds not measurable by conventional means
   - G. Autoradiography
   - H. Enzyme activity assays
   - I. Experimental support for new drug applications
2. Laboratory Services
   - A. Assay of compounds of pharmaceutical interest for:
     1. Leukopenic activity
     2. Effects on reticulo-endothelial system
   - B. Isotopic dilution analysis
   - C. Ultrasensitive tritium determinations (gas counting method)

II. RADIOBIOLOGY
1. Research and Development
   - A. Radiobiological studies
   - B. Radiation protection mechanisms including screening of compounds for radiation protection action
   - C. Sterilization of drugs, sewage, food, packages and containers, plastics and surgical supplies
2. Health Physics Services
   - A. Environmental radioactivity surveys including:
     1. Sample collection
     2. Analysis of air, smear, water, soil, vegetation, animal tissue, milk
   - B. Urinalyses for gross radioactivity or specific radioisotopes
   - C. Special analysis for radioactivity in blood, feces, saliva, mucus, and breath
   - D. Procedure development
   - E. Procedure manuals
   - F. Decontamination
   - G. Radiation hazard evaluation for legal, insurance and public relations purposes
   - H. Consulting
   - I. Complete health physics programs

CONSULTING

1. Design of radiochemical laboratories
2. Personnel selection
3. Personnel training
4. Management consulting
5. Investment analysis
6. Insurance advisory services
7. Supplemental consulting for reactor operators

May we discuss how our specialized skills and equipment can be put to work for you? Just call or write.

Nuclear Science and Engineering Corporation

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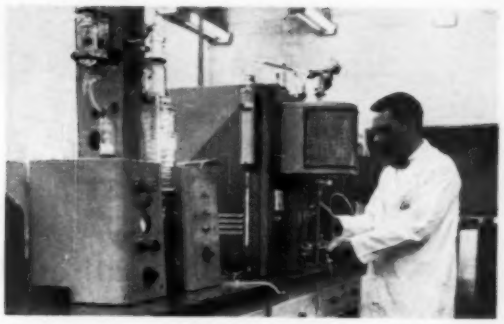


Conductometric analyzer used by Harvey for the determination of carbon and oxygen as impurities in zirconium.

reactor-grade ZIRCONIUM

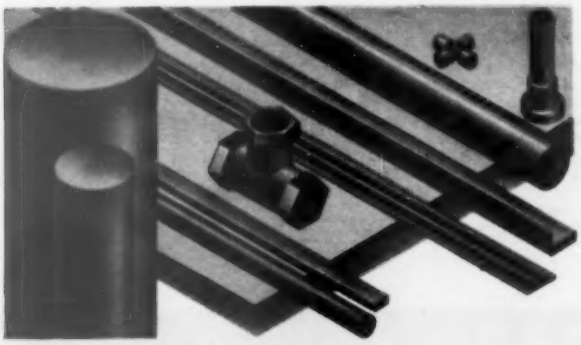
available from Harvey in all mill products

As the nation's largest melter of zirconium sponge and a prime producer of zirconium mill products, Harvey is approved by the Atomic Energy Commission and recognized by principal reactor and equipment manufacturers. The Company's zirconium plant at Torrance, California, is a self-contained, fully integrated facility from sponge through fabrication. And Harvey's great depth of experience with the research and production of metals is your assurance of the ultimate performance in quality, delivery, and service. If you are interested in Zircaloy-2 or any other alloy, our metallurgical and engineering specialists are ready to offer technical assistance and consultation. Write to the general offices, Harvey Aluminum, Torrance, California.

Dual-grading spectrograph at Harvey ascertains level of metallic impurities in reactor-grade zirconium.

Modern laboratories at Harvey Aluminum for reactor-grade zirconium are rated among the finest in the industry.

ZIRCONIUM MILL PRODUCTS PRODUCED BY HARVEY: *Ingot, Billet, Rod, Bar, Extrusions, Forgings, Impact Extrusions, Tubing, Sheet, Plate, Strip, Castings.*



HARVEY Aluminum

GENERAL OFFICES: TORRANCE, CALIFORNIA

Whatever your nuclear handling problems... you'll find an answer at **General Mills!**

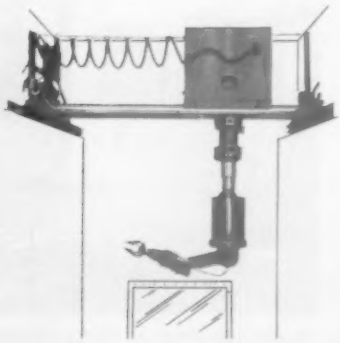
One of these products–from our Nuclear Equipment Department–may be what you're looking for!

3 standard Mechanical Arms

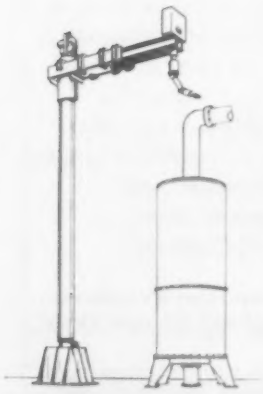
This is **Model 300**—a general purpose manipulator especially designed for hot cell facilities handling items from a few ounces up to 750 pounds. Automatic connections are included for supplementary power tools.

Model 500 is capable of handling up to 2,000 pounds, and **Model 700,** the "strong man" of the line, is equipped with a special hook mechanism for lifting up to 5,000 pounds!

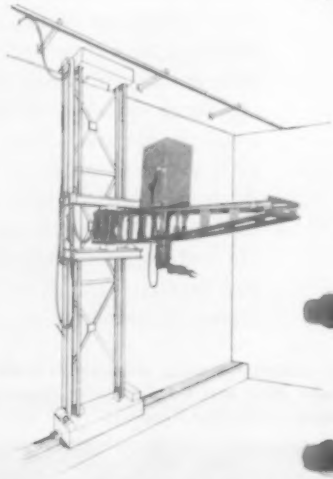
3 basic manipulator mountings



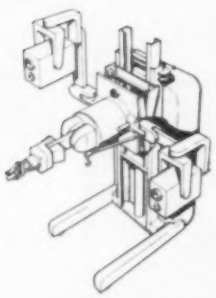
Bridge Mounting—for most hot cell applications this is the type of mounting which best covers the working area. Other bridge designs are also available for larger operations.



Post Mounting—This arrangement facilitates reactor maintenance. Remote assembly and disassembly of valves, pumps, and piping become safe and simple operations. The boom-post can be hoisted from location to location by means of an overhead crane.

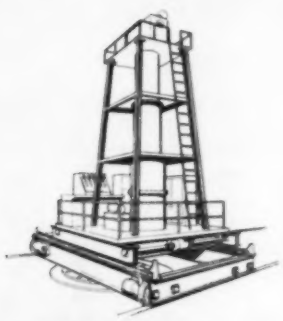


Boom Mounting—enables you to fully utilize hot cell space, providing greater vertical travel. Its exceptional versatility enables it to function in cramped or inaccessible areas—and it eliminates the need for a fixed overhead bridge.



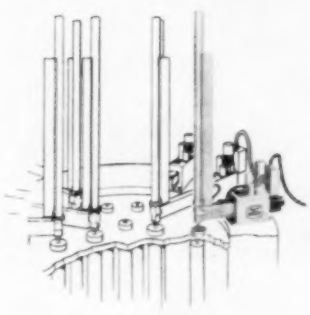
Unmanned Robot Handlers

Either cable or radio controlled, the robot offers tremendous versatility for specialized work. A two-camera, closed-circuit television system provides excellent operation viewing, and a microphone is also included to pick up operational sounds.



Fuel Handling Systems

Generally custom-designed this equipment facilitates removal and replacement of individual fuel elements, providing accurate positioning and safe, reliable refueling operations. The Nuclear Equipment Department offers *complete* fuel-handling system service, including system analyses, area arrangement studies, and equipment design and development.



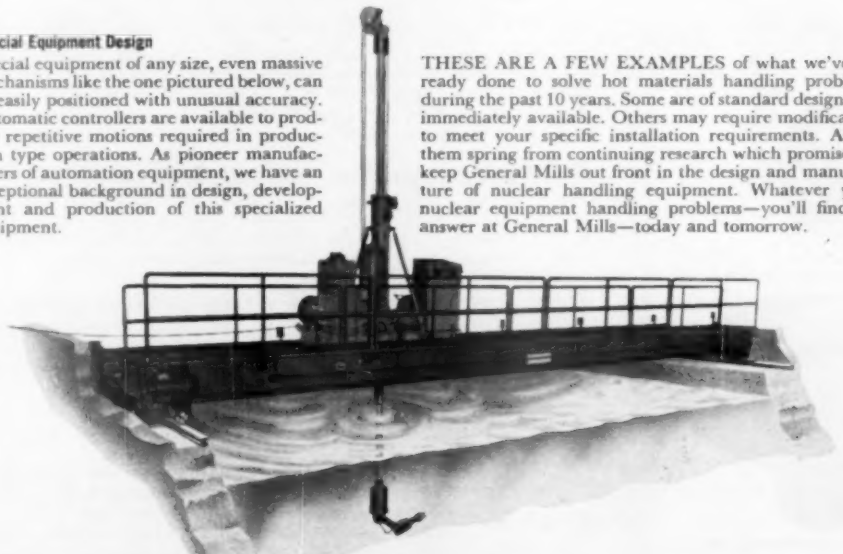
Control Rod Drives

Originally developed for use on test reactors, General Mills' control rod drives can be both manually and automatically operated, and at variable speeds. They receive signals from an electronic control system which in turn receives information from radiation detection instruments at the core of the reactor.

Special Equipment Design

Special equipment of any size, even massive mechanisms like the one pictured below, can be easily positioned with unusual accuracy. Automatic controllers are available to produce repetitive motions required in production type operations. As pioneer manufacturers of automation equipment, we have an exceptional background in design, development and production of this specialized equipment.

THESE ARE A FEW EXAMPLES of what we've already done to solve hot materials handling problems during the past 10 years. Some are of standard design and immediately available. Others may require modification to meet your specific installation requirements. All of them spring from continuing research which promises to keep General Mills out front in the design and manufacture of nuclear handling equipment. Whatever your nuclear equipment handling problems—you'll find an answer at General Mills—today and tomorrow.



If you are uncertain about the type of remote handling equipment that will serve you best, take advantage of our technical counseling service. Consultation during your early planning stages is best, but feel free to call upon us at any time.

NEW BOOKLET right off the press gives additional facts about our complete line of equipment for the atomic industry. Send for your free copy today. Write: Nuclear Equipment Department, Mechanical Division of General Mills, 1620 Central Avenue, Minneapolis 13, Minnesota.

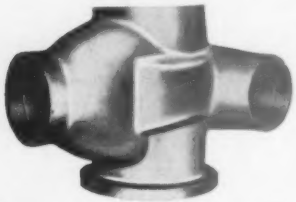
Nuclear Equipment Department . . . Born with the nuclear age . . . a decade ago

MECHANICAL DIVISION

MINNEAPOLIS 13, MINNESOTA

General Mills

Stainless steel tee casting furnished for Savannah River Project.

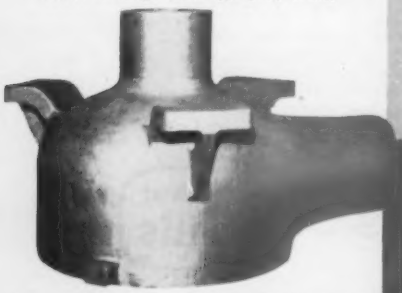


Fifty-five hundred pound stainless steel volute casing for primary coolant loop in Experimental Boiling Water Reactor.

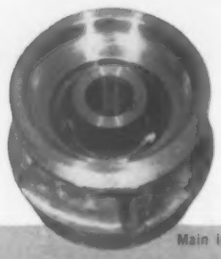
Sixteen-inch swing check valve for reactive system for **NUCLEAR POWERED** guided missile cruiser.

Stainless steel primary coolant volute casing for **NUCLEAR POWERED** submarine service.

Double discharge volute type pump casing.



Primary coolant pump casing for United States Navy, **NUCLEAR POWERED** super carrier Enterprise.



Main impeller for primary coolant volute.

Eighteen-inch uniform wall section fitting furnished in C F - 8 for Dresden Nuclear Power station.

FIRST IN NUCLEAR POWER!

***First** major producer of castings for NUCLEAR POWER*

Our first casting for *Nuclear Power* was produced in 1946. Active participation since that time includes the following programs: PWR, LSR, APPR, SFR, S4W, S5W, S1C, S2C, A1W, A2W, C1W, EBWR, VBWR, Savannah River Project, Dresden Nuclear Power Station, N. S. Savannah, Yankee Power Project.

***First** privately purchased industrial Betatron in the United States*

Extensive testing proves better than 2% sensitivity obtained in radiography of castings with section thicknesses of 3 inches or more.

***First** steel foundry to install a complete direct reading Spectrographic Laboratory*

Rapid chemical analysis of all elements permits absolute melt control of carbon, low alloy and high alloy heats.

***First** ultrasonic inspection of cast austenitic steel*

***First** in Quality*

Complete testing facilities available for: gamma and Betatron radiography, dye penetrant, Zygle, Magnaflux, ultrasonics, mass spectrometer leak testing, ferroxyl testing, weld probing, chemical and physical analysis. It is evident that we are extremely well qualified to engineer, produce and inspect castings for any end use involved in *NUCLEAR POWER* and to any specifications which are in effect at the present time.

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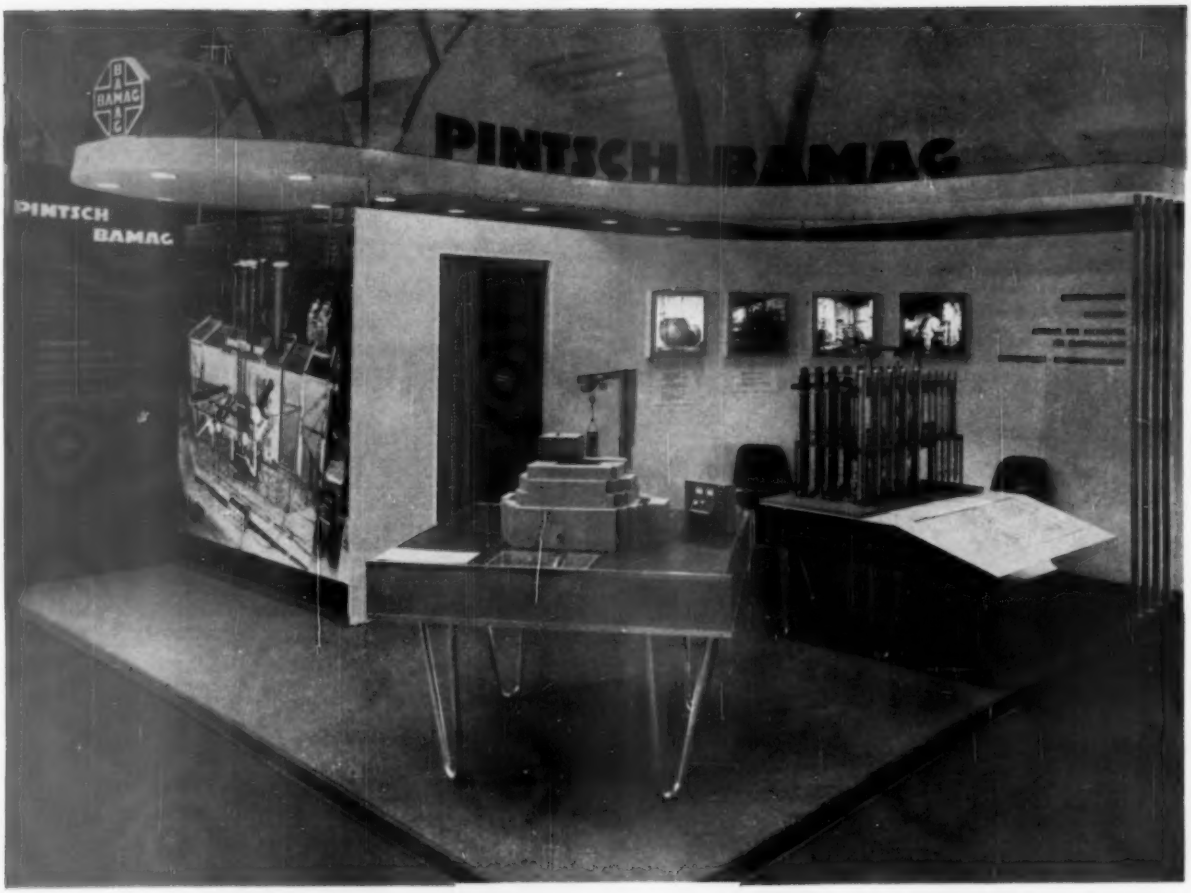


Remember ?

If you have visited the exhibition ATOMS FOR PEACE at Geneva then you will certainly recollect the stand of PINTSCH BAMAG AG. at the joint exhibition of German enterprises. At our stand we displayed models and pictorial documentation with reference to decontamination plants, Argonaut research reactor, installation of reactors, superstructures for reactor stations and a pilot plant for Heavy Water as prime product (H_2S dual temperature exchange).

Interesting discussions between visitors from the United States of America, Great Britain, France, Belgium, Holland, Switzerland, Italy, etc. and our specialists in Nuclear Technique offered an opportunity of presenting our activities.

Our decontamination plants for circulation water and waste water in nuclear plants and laboratories — as already erected by PB for the Munich reactor station — caught the particular attention of the visitors.

The decontamination plant for the Berlin Research Institute for Nuclear Chemistry is under construction, while other similar installations are on order with PINTSCH BAMAG AG.

PINTSCH BAMAG's proper, workmanlike and timely execution of the installation of the reactor supplied by Atomics International for the Berlin Research Institute for Nuclear Chemistry has found the unrestricted appreciation of the manufacturer and ordering authorities.

PINTSCH BAMAG

HEAD OFFICE: BUTZBACH/HESSEN, WEST GERMANY

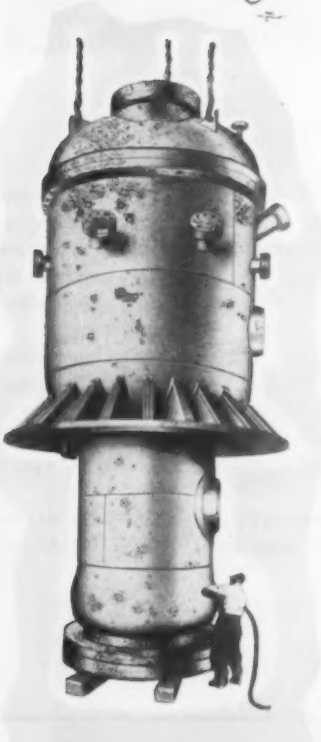
With over 35 years of experience in the field of Shielding, O. G. Kelley Company plays an important role in .....

RADIATION SHIELDING IS OUR SPECIALTY . . .

Manufactured and Installed to suit the specific requirements of:

- ATOMIC ENERGY
- NUCLEAR INDUSTRIES
- HOT LABORATORIES
- INDUSTRIAL X-RAY ROOMS
- BIOLOGICAL LABORATORIES

Stainless steel equipment of intricate design, fabricated to precise tolerances. Years of experience in the A. E. C. field enables us to meet your most rigid requirements . . .



. . . **ETR** recently built by O. G. Kelley & Company for the A. E. C. Installation, Scoville, Idaho

One of a group of lead filled "Transportation Casks" built for E. I. du Pont de Nemours & Company, Savannah River plant, Aiken, South Carolina. These casks, which are used for the shipping of radioactive materials, are fabricated from stainless clad steel with a 8¾" thickness of lead homogeneously bonded to the interior carbon steel surfaces for heat transfer and radiation shielding. The hundreds of stainless steel "fins" on the exterior surfaces permit the dissipation of heat.

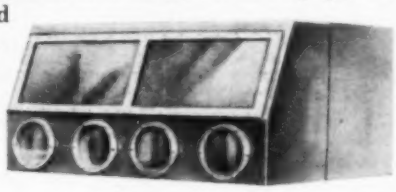
Serving the Nuclear Industries

FUME HOOD

STAINLESS STEEL LABORATORY EQUIPMENT

The stainless steel equipment portrayed is but a small portion of that being manufactured complete with removable openings, rounded corners, and all units highly polished to a mirror finish inside and out.

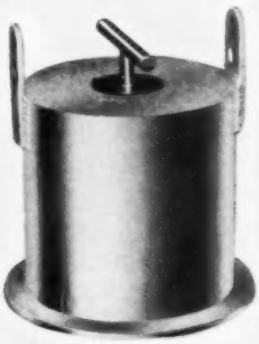
O. G. Kelley & Company has long had the skill and facilities for the toughest, most specialized fabricating problems and are noted for the precision fabrication of stainless steel equipment of the most intricate and exacting design. Our engineers are at your disposal for consultation without obligation.

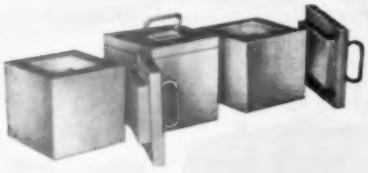


GLOVE BOX

RADIATION SHIELDING

LEAD CONTAINERS made to your specifications for the shipping and storage of radioactive materials — Lead Bricks of special design or standard type.





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Radiation Consulting and Engineering Services • Fabricating and Refabricating Nuclear Fuel Equipment • Nuclear Handling Fuel Element Equipment • Reactor Consulting and Engineering Services • Experimental Nuclear Reactors • Research Nuclear Reactors Materials Testing Nuclear Reactors • Nonferrous Metal Fabricators • Exhaust Hoods • Autoclaves • Lead and Lead Alloys Radiation Shielding • Gas Scrubbers • Pressure Vessels • X-Ray Screens • Shielded Containers • Power Nuclear Reactors Ferrous Metal Fabricators • Radiation Processing Equipment • Shield-Metal-Clad Plywood • Test Loops • Nuclear Hot Cells Radioisotope Safes • Shielding Windows • Radiation Shielding Brick • Radiation Absorbers • Nuclear Fuel Elements • Ion Exchange Equipment

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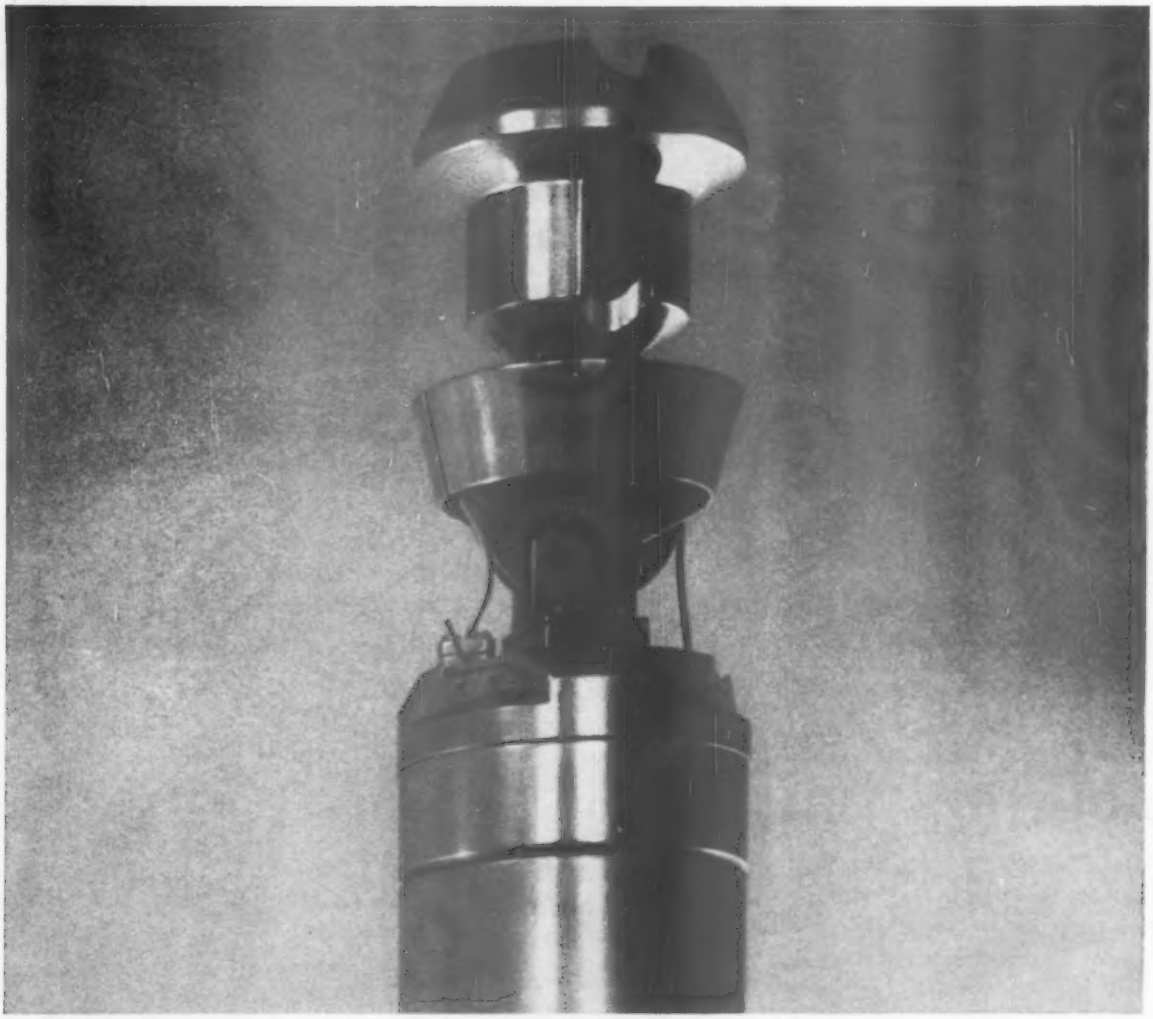

Part of a model of a charging plug assembly (to the design of C. A. Parsons for The Nuclear Power Plant Company Limited) now being produced for Bradwell nuclear power station.

The know-how on gas-cooled reactors

Consider these facts. In 1951, the graphite-moderated gas-cooled reactor was considered barely feasible as a source of power. By 1953, 70,000 kW station, competitive with conventional stations, had been designed. This was Calder Hall.

The first reactor started up in June 1956; the second in May 1957. But by then, three new stations were under way: Berkeley (273,000 kW), Bradwell (300,000 kW) and Hunterston (300,000 kW).

The latest station, Hinkley Point, will feed 500,000 kW into the super grid. All use natural uranium as fuel and produce plutonium.

This fantastically rapid advance is largely a matter of straightforward engineering know-how gained through the construction and operation of Calder Hall —in which the companies of Tube Investments Limited played their part. This know-how is still growing fast as we work on components for the new stations. It, and our ability to do things with tubes that hardly anyone else can accomplish, are at the service of all atomic engineers.

Other products include: Fuel element cans. Finned heat exchanger tubes. Rare metal components. Engineered reactor components such as:— Graphite restraint and stand pipe assemblies. Neutron sources.

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Co-ordinating the nuclear activities of the Companies of Tube Investments Limited.

A TI COMPANY

Atomic Instruments and Systems

Baird Atomic

Baird-Atomic manufactures a complete line of radioactivity counting and analysis instrumentation. These instruments and systems meet the most rigorous requirements of the newest radioactive tracer techniques used in industrial, physical, biological and medical problems. B-A instrumentation is recognized for its superior reliability, stability and accuracy in a field where the demand for these attributes is constantly increasing.

The following pages briefly describe some of Baird-Atomic's instruments, systems and complete laboratories for atomic counting and analysis. For complete information, ask for Catalog A-1 (Instruments) and Catalog A-2 (Systems).

Condensed Catalog A-3

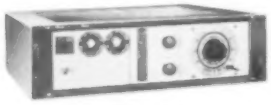
Baird-Atomic, Inc. Cambridge, Mass. USA

123
BUDGET PRICED
GLOW TUBE SCALER

For all Geiger-Muller applications. Built-in 2500v high voltage supply. Provision for timer unit.

For fast integral, proportional and scintillation counting. Combines high gain with exceptional non-overloading characteristics. With pulse height selector.

212
GENERAL PURPOSE
AMPLIFIER
University Series



131A
VERSATILE
GLOW TUBE SCALER

For general purpose counting. Adjustable pulse height selector 0.25v to 10v. Preset or elapsed timing up to 1 hour with 0.1 second accuracy.

For fast analytical scintillation counting. With pulse height selector. For pulse height analysis systems (integral and differential).

215
NON-OVERLOADING
LINEAR AMPLIFIER

132
MULTISCALER® II

High speed glow tube scaler with built-in 2500v stable high voltage supply. Adjustable pulse height selector. Eight predetermined count settings. Provision for preset or elapsed timing.

For pulse height analysis systems. Oak-Ridge A-1-D design. With pulse height selector. Scintillation, proportional and ion chamber applications.

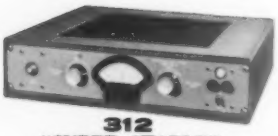
218
LINEAR AMPLIFIER

134
ULTRA-HIGH SPEED
GLOW TUBE SCALER
University Series

Resolving time better than 1 microsecond. Eleven pre-determined count settings. Provision for timer unit.

For high gain proportional counting. Low noise and extreme non-overloading characteristics. Excellent stability and reliability.

255
PROPORTIONAL
AMPLIFIER



312
"SUPER STABLE" HIGH VOLTAGE SUPPLY

For precision scintillation counting. Stability 0.02% per day. Voltage range 85v to 1450v in 17 steps.

All DEKATRON* electronic timer. Nine preset time settings. Elapsed time 0 to 99 minutes.

630
PRECISION GLOW TUBE TIMER
University Series

318
HIGH VOLTAGE POWER SUPPLY

For general counting applications. Continuously variable +500v to +2500v. Stability 0.2% maximum drift per day.

For elapsed or preset time from 0 to 60 minutes. Accuracy 0.1 seconds.

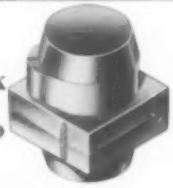
960
DUAL PURPOSE TIMER

319
GENERAL PURPOSE HIGH VOLTAGE SUPPLY

For geiger and proportional counting applications. Continuously variable +1000v to +5000v. Stability approximately 0.2% per day.

Sectional construction for increased versatility. For 4π counting or separate simultaneous gamma and beta counting in same shield.

LOW BACK GROUND 4π SHIELD



800D

410
COUNT RATE MONITOR

With built-in high voltage supply. Four ranges of 200, 2000, 20,000 and 200,000 cpm. Equipped with loudspeaker and recorder output.

With preamplifier or non-overloading amplifier (Model 810A), Includes NaI (T1) well crystal assembly, interchangeable with solid crystal or beta crystal assembly. 2″ Lead shielding.

GAMMA DETECTOR SHIELDED BENCH-TYPE

810

412
PRECISION DUAL RATE METER

Simultaneous logarithmic and linear display up to 1,000,000 cpm. Variable time constant. Provision for dual recorder connection.

NaI (T1) crystal, photomultiplier with non-overloading stacked cathode follower preamplifier.

812
SCINTILLATION PROBE

414
LOGARITHMIC SURVEY METER†

"Gun Type" portable for instantaneous direct readings. Three decade scale, 3 mr/hr to 3,000 mr/hr.

Extremely stable for alpha, beta and x-ray counting. With sample holder.

MICROTHIN END WINDOW FLOW COUNTER

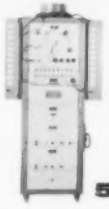
821B

510
SINGLE-CHANNEL ANALYZER

For differential or integral pulse height analysis. Baseline variable from 0v to 100v. Channel width variable from 0v to 7v.

With End Window GM Tube, 1WAA (1.4 - 1.9 mg/cm² window).

822A
SAMPLE HOLDER



MULTI-CHANNEL ANALYZER

520

20 to 120 Channels for rapid pulse height analysis. Resolving time 2.4 microseconds.

† Patent Applied for

*Trademark

Large area scintillation detector with high alpha sensitivity. Includes stable high gain preamplifier.

870
ALPHA SCINTILLATION PROBE

Baird Atomic

Atomic Instrument Systems

A-2-3

COMPLETE BASIC LABORATORY

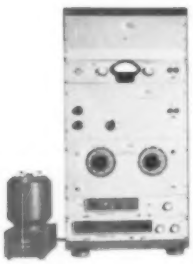
Designed to meet the requirements of most research and industrial radioisotope work. A compact, reliable and versatile unit capable of performing all types of gas and scintillation counting of alpha, beta, gamma and x-rays with ease and precision. Permits use of these three different detection methods with the same fundamental scaler assembly.

A-2-9

COMPLETE ***University Series***

ADVANCED LABORATORY

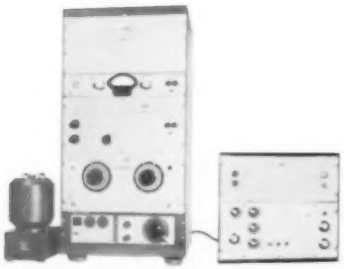
Designed for high precision radioisotope counting and analysis. Fastest and most sensitive instrumentation available for detection and analysis of alpha, beta, gamma and x-rays. Choice of high voltage supply for optimum performance.



A-2-17

SINGLE CHANNEL SCINTILLATION SPECTROMETER

The Standard of the field for differential analysis of gamma radiation. An all-electronic system . . . extremely stable and reliable with excellent non-overloading characteristics.



A-2-19

AUTOMATIC RECORDING SCINTILLATION SPECTROMETER

A B-A exclusive, programmed recording system . . . a new concept in automatic data processing to the field of atomic instrumentation. Provides automatic histogram plotting of integral or differential spectra. Computes and records total count for variable predetermined time intervals.

A-2-25

SCINTILLATION UPTAKE SYSTEM

B-A collimator in this system is unique in its excellent flat field response, high off-field rejection and high positional stability. For medical isotope applications such as thyroid uptake measurements and in vivo studies . . . super stable electronics.

A-2-27
AUTOMATIC SAMPLE CHANGER
Automatically programs, counts and records 50 pre-coded samples. Magazine loading saves time and eliminates intermixing. Maximum count accuracy assured by "4π" shielding in detector. For routine sample assay, half-life determinations, absorption data.

A-2-29
POSITRON SCANNER
For external non-surgical diagnosis and localization of tumors. Based on the Brownell-Sweet positron coincidence technique. Automatic chart recording of radioactivity uptake in abnormal tissue.

A-2-31
MEDICAL RATIO ANALYZER
Automatically records the ratio of uptake activities in two organs or areas of the body. Individually measures initial relative uptake of each organ or area simultaneously, then electronically computes and plots ratio in percent. In addition, sensitive measurements of renal clearance rates can be taken.

For Specifications on these and other Atomic Instruments, request Catalog A-1 and A-2.

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Spectrographic Laboratories
Direct Reading Spectrometers
Spectromets
Infrared Recording Spectrophotometers

RADIOACTIVITY INSTRUMENTS AND SYSTEMS
Complete Counting Laboratories
Analytical Scintillation Systems
Special Medical Systems

TRANSISTOR & SEMICONDUCTOR TEST EQUIPMENT

LABORATORY INSTRUMENTS

Offices In: New York Philadelphia Pittsburgh Cleveland Detroit Chicago Atlanta Dallas Los Angeles San Francisco Montreal and Principal cities abroad.

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Instrumentation for Better Analysis

Baird Atomic

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Tubexperience in action

Made to pass the severest tubing test of all

14 different tests have proved it now ready for reactor use

*Superior tubing for applications in the atomic energy field is usually produced to meet highly exacting specifications. A length of tubing like the one shown above may well undergo all the tests and inspections listed here—plus special ones required by the customer.

1. Visual surface check
2. Dimension check (using precision measuring instruments)
3. Hydrostatic test
4. Eddy current inspection
5. Tensile and elongation test
6. Rockwell hardness test
7. Flare & flatten test
8. Dye penetrant (over entire length of tube)
9. Metallographic mount (for checking analysis, temper, grain size and structure)
10. Quantitative and qualitative analysis
11. Corrosion tests (Huey, salt spray, Strauss, autoclave, etc.)
12. Spectroscopic examination
13. X-ray inspection
14. Ultrasonic inspection

We offer many special services, and of our more than 120 available analyses, many are important to atomic tubing users. Equally important are such factors as our ability to produce tubing to extremely close tolerances; the weldability of the stainless and zirconium and nickel base alloy tubing we supply; and our ability to supply stainless alloys and other materials with very closely controlled chemical composition (Type 348, for example, with cobalt held to .10 maximum).

For more information, write us, giving such pertinent facts as the alloys in which you are interested and the end use of the tubing. We will be glad to send you Data Memorandum No. 20, "Tubing for Atomic Power." Write Superior Tube Company, 2027 Germantown Ave., Norristown, Pa.

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The big name in small tubing

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All analyses .010 in. to ¼ in. OD—certain analyses in light walls up to 2½ in. OD

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Widely Used L&N Instruments for Nuclear Research

For automatically plotting a curve showing the relationship between any two interdependent variables. Range (for stocked instrument): 0 to 10 millivolts on both X and Y axes. Measuring circuit: D-C potentiometer. Balancing Time—X axis, 1 second nominal; Y axis, 4 seconds nominal. Write for Data Sheet E-ND46(1).

Speedomax® X-Y Recorder — 69950

For automatic plotting of any two variables simultaneously against time on one chart. Range: Any one or two standard Speedomax ranges as specified including temperature pH, load, millivolts, etc. Balancing Time: 3, 2, or 1 second as specified. Measuring Circuit: D-C potentiometer or Wheatstone Bridge as specified. Write for Data Sheet E-ND46(3).

Speedomax $X_1 - X_2$ Recorder — 69955

Wheatstone Bridge—4735

For resistance measurements of high accuracy in laboratory use. Range: 0.01 ohm to 1,111 megohms. Limit of Error: ±(0.05% + 0.001 ohm) up to 100 megohms; ±0.5% above 100 megohms. Rheostat Switches: Five decades of enclosed switches in steps of $10 \times (1000 + 100 + 10 + 1 + 0.1)$. Multiplier dial: Eleven position enclosed switch, multipliers from 10^{-5} to 10^{+5}. Write for Data Sheet E-53(1A).

Type K-3 Potentiometer—7553

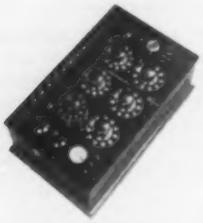
High-precision Guarded Universal Potentiometer for laboratory use. Three Ranges: 0 to 1.611 volts; 0 to 0.1611 volt; 0 to 0.01611 volt. Limit of Error: High Range, ±(0.01% + 20 μv). Medium Range, ±(0.015% + 2 μv). Low Range, ±(0.015% + 0.5 μv). Available for bench operation or for relay rack mounting. Instrument reads directly in digits. Write for Data Sheet E-51(6).

Used as microvolt meter; micro-microammeter; recorder pre-amplifier; null detector. *9835 Microvolt Unit.* Range: 0 to 50 or −25 to +25 μv; scale multipliers 1, 2, 4, 10, 20, 40. Accuracy: ±0.4% ±0.5 μv. *9836 Micro-Microampere Unit.* Range: 0 to 1000 or −500 to +500 μμa; scale multipliers 1, 2, 5, 10, 50, 100, 200, 500, 1000, 2000. Accuracy: ±0.5 to 0.8% ±20 μμa. Write for Data Sheet ED7(1).

Stabilized D-C Indicating Amplifiers

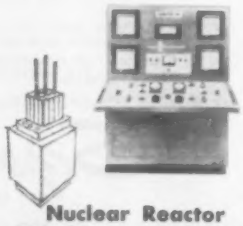
Provides scintillation counters with a regulated power supply for one tube or for ratio measurements with two tubes. Two outputs. Ranges: (1) 500 to 1310 volts d-c across 1 megohm load, adjustable coarse and fine dials; (2) 480 to 790 d-c across 1 megohm load, adjustable coarse dial. Line Voltage Tolerance: 0.01% d-c output change for a 100 to 125 a-c line voltage change. Write for Jrl. Ad. EM-51(1).

Stabilized Supply for Multiplier Phototubes 101038



Type G-2 Mueller Bridge — 8069

For extremely high-precision temperature measurements by the resistance thermometer method. Range: 0 to 111.111 ohms in steps of 0.0001 ohm. Limit of error is a few hundred thousandths of an ohm or a few parts in a million, whichever is larger provided bridge is calibrated periodically and bridge and thermometers are calibrated in terms of same unit. Write for Data Sheet E-33(3).



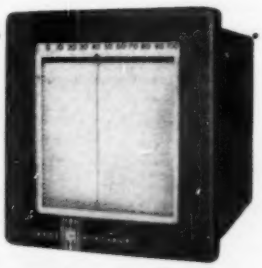
Nuclear Reactor Simulator — 6900-A1

The economical but highly effective Nuclear Reactor Simulator electronically synthesizes the operating characteristics of most reactor types to implement basic education and research in reactor design and operation. To give operators the "feel" of a true reactor it employs the same Speedomax recorders and L&N control used on present reactors. Write for Data Sheet E-03(2).

Leeds & Northrup Company 4936 Stenton Ave., Phila. 44, Pa.

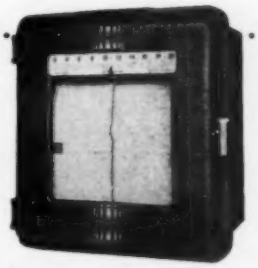
L&N Nuclear Reactor Instrumentation . . . for Engineers and Designers

For measurement of Log N, Period, Log Count Rate and other nuclear quantities. Log N, 0001 to 300; Period, 30—infinity—3 seconds; and Log Count Rate, 1 to 10,000. Full scale balancing is 5 seconds nominal. Limit of error is 0.5% of range span. Also available as temperature pH and millivolt recorders. Write to L&N Sales Office for data.



Speedomax H Recorders

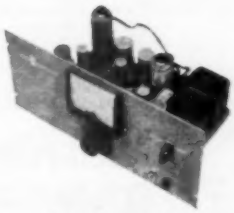
For measurement of from 1 to 160 temperatures and practically any other variable that produces an electrical signal. Ranges as required. Balancing Time: From 1 second full scale for a single variable to 160 temperatures in 11 minutes. Limit of Error ±0.3% of range span. Write for Tech. Pub. ND46.



Speedomax G Recorders

Type HS and R Galvanometers

For ion current detection in reactor control consoles. These high sensitivity galvanometers, available for a wide variety of measurements, are used with either telescope, or lamp and detached scale for reading deflections. Write for Catalog ED describing our complete line of D-C and A-C galvanometers and their accessories.



Ion Current Amplifier — 9836-S

For use as ion current amplifier of linear channels for reactor control. Has 18-position switch covering ranges from 1, 2, 5 × 10^{-4} amps to 1, 2, 5 × 10^{-9} amps. Full scale output to Speedomax G or H Recorders is 0 to 10 mv. Limit of Error: ±0.5 to 0.8% of reading ±20 μμa. 18-position switch can be mounted on chassis or remotely. Write for Data Sheet E-03(1).

Series 60 Servo Amplifier — 10874

The heart of L&N nuclear control instrumentation. This key "building block" provides as *standard* the control qualities of former custom-built velocity-servo systems. Reset rate 100 repeats per minute. Rate time adjustable from 0 to 8 minutes. Width of proportional band adjustable by dial calibrated 0 to 500% of the Amplifier's range. Write for Folder ND4(7a).

Package Control Systems

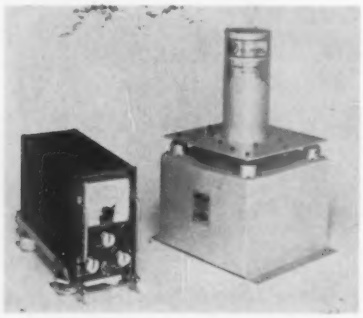
The latest approach to reactor control technology, an L&N "package," is the result of a comprehensive engineering program which includes the design, engineering, and fabrication of all control and safety channels needed for complete reactor control. Surprisingly economical, because each package incorporates standard L&N nuclear instrumentation; customized circuitry is unnecessary. Customizing can therefore be limited to assembly of a panel or cubicle "tailored" to fit the requirements of your installation. Thus you save, both in first cost, and in operating efficiency. See Folder ND46-70-700(1).

LEEDS & NORTHRUP

Instruments · Automatic Controls · Furnaces

AIRBORNE-CARBORNE SCINTILLATION COUNTER

MODEL ACS-101: As a tool for the exploration for radioactive ore bodies, the sensitivity of the Model ACS-101 increases the possibility of a discovery and



permits operation at higher altitudes with consequent increased safety for personnel and equipment. Designed specifically as a geophysical exploration instrument, it is characterized by ruggedness, reliability, and accuracy over a wide range of ambient temperatures.

SPECIFICATIONS

Ranges: From 100 up to 20,000 counts per second.
Zero Displacements: 0.5 and 1.0 times full scale.
Time Constants: 0.2/0.5/1 and 5 seconds.
Ratemeter Sensitivity: 10 millivolts
Pulse-Pair Resolution: 2 microseconds
Linearity: 3% of full scale on any range.
Power Requirements: 3 amperes at 12 volts.
Alarm System: Audible—may be preset to operate at any percent of full scale.
Recorder: Optional Equipment
Weight: Amplifier-Ratemeter—9 lbs., 5″ x 2″ detector—19 Lbs. (The above weights include the shock-mounts.)
Size: Amplifier-Ratemeter—5″ W x 7¼″ H x 12″ L—5″ detector—10″ W x 18″ H x 12¼″ L.
Single Unit Price: 5 x 4 Crystal $6,550.00
5 x 2 Crystal $5,290.00

Scintillation Probe—Model 210 and Surface Control Unit—Model 211

For Better Gamma Logs at Higher Logging Speeds

Low Dead-Time: 2 microseconds pulse-pair resolution. *High Linearity:* ± 2% on any range. *Small Diameter:* 1½ inches O.D. *High Sensitivity:* 8 counts per second per microroentgen per hour with a ¾ x 3 inch crystal. Higher sensitivity may be obtained by using a larger crystal. *Ranges:* From 50 up to 10,000 counts per second. *Time-Constants:* 0.5/1/2/5 and 10 seconds. *Output:* To drive a standard 10 MV recorder. *Power Input to Surface Control Unit:* 115 V 60 CPS. *Power Input to Probe:* 115 V 400 CPS (obtained from Surface Control Unit). *Cable:* Type 3HO—3 conductor, steel sheath. *Price:* $4,530.00 without probe housing and cable head.

TRANSMISSION TYPE FLUORIMETER

Model 500

Check these Exclusive Features

Range is from less than 10^{-9} grams to 10^{-5} grams of uranium.
Applications include: Uranalysis for uranium, Geochemical prospecting, Uranium waste disposal investigations, Uranium ore assay, Control in processing and milling.
Improved sensitivity is made possible by the advantages inherent in transmission principle—low inverse square losses and low background.
High degree of linearity and resolution provided by use of potentiometric measuring circuit.
Lamp and circuit stability are independent of power line frequency variations.
Entirely self-contained and compact.
Digital dial reading.
Damage-proof galvanometer.
Phototube operated well below fatigue level. Excellent long-term stability.
Optical assembly is such that no ultraviolet can reach the sample-slide.
Recessed calibration controls.
Price: $1,255.00.

MULTI-PURPO EXPLORATION COUNTER

Model MP-300

The MP-300 is unique in terms of sensitivity, stability and response to soft radiation. A change in radiation level of several percent can be measured with reliability. Accuracy is maintained throughout a wide range of ambient temperature and battery voltage. The Model MP-300 will respond to energies below 25 KEV.
The Model MA-301 External Meter-Alarm is a useful accessory when the counter is used as a carborne instrument. By the addition of a Model GP-320 Geiger Probe, the MP-300 Counter can be used for drill-hole probing and assay of uranium ore.

SPECIFICATIONS

Crystal Sizes: 1½ x 1 inches/1½ x 1½ inches.
Sensitivity: 10 counts per second per microroentgen per hour with a 1½ x 1 inch crystal.
Time Constants: 0.5, 1 and 4 seconds.
Ranges: From 100 up to 10,000 counts per second.
Weight: 7 pounds
Size: 11″ L x 9″ H x 5″ W
Batteries: 4 Type D Flashlight Cells.
Price: $770.00

URANIUM LOGGING UNIT

The Model GL-220 provides quantitative grade-thickness determinations for uranium ore-body evaluation. Dead-time of

probe and circuitry is independent of the count-rate. Rate-meter circuit has high degree of linearity. Calibration is in counts per second.
Transistorized circuitry is stabilized against changes in ambient temperature. Geiger probe and cable-head are watertight.
The GL-200 is an excellent instrument for "Integral Method" ore-body assays.

SPECIFICATIONS

Probe: L 32 inches, W 3¾ lbs., Dia. ¾ inches
Recorder: Weight (with counter): 34 lbs. Size (Max. over-all including counter): Height: 16½ inches, Width: 10½ inches, Length: 12 inches
Chart Scale Factors: 1 major division per 5 or 10 ft of probetravel; 1 minor division per 3″ or 6″.
Price: $1,983.00 including recorder.

INTEGRAL METHOD LOGGING SYSTEM

Model LS-202

The Model LS-202 is the first commercially available uranium gamma-ray logging system to incorporate the "Integral Method" of uranium ore body evaluation developed by R. F. Droullard and P. H. Dodd of the USAEC.
In this instrument both the gamma-ray intensity in the hole and the integral of the intensity distance curve are recorded on one strip chart.
The Ball Model LS-202 Integral Method Logging System provides the maximum in accuracy and reliability in gamma-ray drill-hole assays. Is easy to operate, computes and records the area under the curve directly on the recorder chart. Reduces data reduction to a minimum.
Price: $13,850.00

Write for complete information

BALL BROTHERS RESEARCH CORPORATION

HILLCREST 2-2966 BOX 191 **BOULDER, COLORADO**

THIS GLOVE SOLVES THE PROBLEM!

NEO-SOL*

PREMIUM QUALITY
NEW MILLED NEOPRENE

NUCLEAR PROTECTION
DRY BOX GLOVE

PROVIDES SAFE AND TROUBLE-FREE PERFORMANCE IN CRITICAL GLOVE-BOX OPERATIONS

ESTABLISHES NEW HIGH STANDARDS OF DEPENDABLE IMPERVIOUS PROTECTION AGAINST CONTAMINATION

EACH GLOVE IS HIGH VOLTAGE TESTED

After all other inspections and tests are completed, each glove must withstand thousands of volts of electricity to prove absolute protective integrity

CHARCO'S NEO-SOL DRY BOX GLOVES EXCEED THE MOST RIGID REQUIREMENTS OF THE NUCLEAR ENERGY INDUSTRY AND NOW ARE IN USE AT THE LARGEST ATOMIC ENERGY PLANTS

CHARCO "NEO-SOL" Dry Box Gloves are NOT made by the Neoprene Latex Coagulation Process. They are carefully manufactured of MILLED NEOPRENE by the Multiple-Dip Cement Method, using MOLECULAR solvent solutions of Neoprene. The CHARCO method yields non-porous films of intimate molecular structure with greater homogeneity and impermeability. Our Dry Box Glove Folder graphically illustrates the basic difference, and the superiority of gloves made of multiple-dipped milled neoprene.

CHARCO maintains its own completely equipped and staffed laboratory. We welcome the opportunity to help solve any problems you may have

Write for **ILLUSTRATED FOLDER OF DRY BOX GLOVES**

In Complete Range Of Styles To Meet Your Every Need

CHARCO'S Expanded Plant Capacity Insures Prompt Delivery Of Orders

CHARLESTON CHARCO SERVICE FOR SAFETY RUBBER CO.

CHARLESTON RUBBER CO. [illegible] CAROLINA

Controls for Radiation, Inc.

offers comprehensive programs for control of radiation hazards, applied nuclear research and development, and radioanalyses.

The following brochures are available

H-1 Radiation Hazards Protection Program
H-2 Applied Nuclear Research and Radioanalytical Services
H-3 Film Badge Service
H-4 Bio-assays for Radioactivity
H-5 Environmental Radioactivity Surveys

Proposals will be made without obligation, on any of these services; overseas inquiries are invited.

CON-RAD

controls for radiation INC

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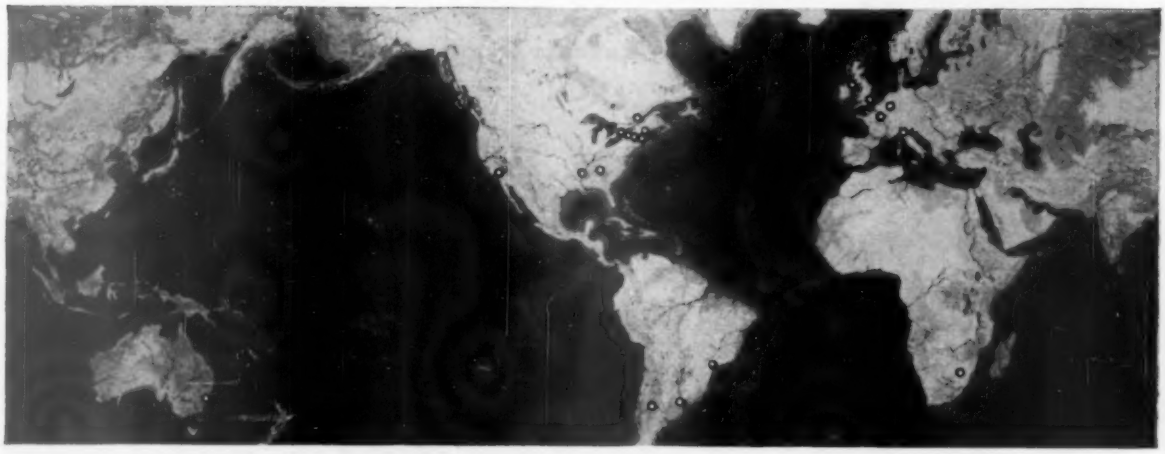
Around the world and still expanding

Norton products for nuclear progress



In the growing Nuclear Industry — one of the most important factors in the future of all mankind — the constant interest and steadily increasing participation of Norton has resulted in important refractory product developments, including:

- *Ceramic fuel units of uranium oxide — alone or in combination with thorium oxide — made to exact specifications.*
- *Metallurgical refractories for processing and reprocessing nuclear fuel materials and other unusual alloys and metals.*
- *NORBIDE* boron carbide for shielding and control rods. This chemically and thermally stable material is lightweight, and absorbs neutrons without becoming radioactive.*
- *ALUNDUM* aluminum oxide, MAGNORITE* magnesium oxide, CRYSTOLON* silicon carbide and other high-purity oxides, borides, carbides and nitrides, as source materials or structural components.*
- *ROKIDE* ceramic spray coatings of aluminum oxide, zirconium oxide, zirconium silicate; also, silicon carbide coating for graphite. Resistance to corrosion and heat are the typical characteristics enabling these coatings to upgrade materials for reactor construction.*

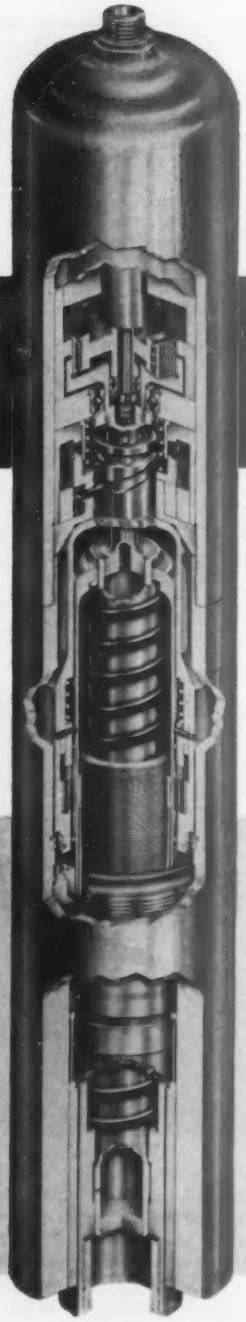
Stable, high-melting refractories for a variety of other industrial applications are supplied by the international, constantly growing organization of Norton plants and branch offices. For further information see your Norton Representative or write NORTON COMPANY, 670 New Bond Street, Worcester 6, Mass.

*Trade-Marks Reg. U. S. Pat. Off. and Foreign Countries

NORTON
REFRACTORIES
Engineered... Rx ...Prescribed

Making better products . . . to make your products better

NORTON PRODUCTS Abrasives • Grinding Wheels • Grinding Machines • Refractories • Electrochemicals — BEAR-MANNING DIVISION Coated Abrasives • Sharpening Stones • Pressure-Sensitive Tapes



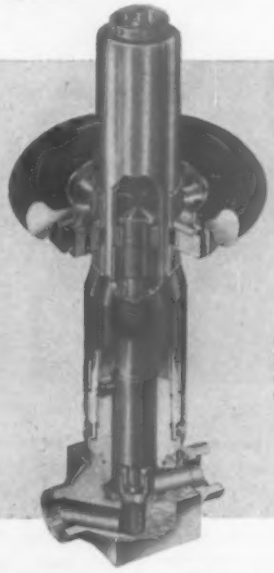
Reactor Components Systems

FOR YOUR NUCLEAR PROGRAMS

United . . . a reliable subcontractor for control rod drive mechanisms, refueling systems, valve actuators and special remote operating equipment . . . offers the experience, special skills and complete integrated facilities of their Atomic Power Department to the nuclear industry — and to you.

We would welcome the opportunity to discuss your particular problems or requirements in the development of reactor components for your nuclear programs.

Hermetically sealed control rod drive mechanism using a 60 cycle power supply to meet U. S. Navy requirements.



1 inch globe valve with a hand operated United Harmonic Drive actuator. The actuator is adaptable to motorized operation.

CONTROL ROD DRIVE MECHANISMS

In addition to design, development and manufacture of control rod drive mechanisms to your submitted specifications . . . United's continuing research has resulted in the development of the United Harmonic Drive principle — a method of transmitting power through steel walls by controlled deflection waves that produces positive linear motion. Using the new principle, the control rod drive mechanism wall is deflected within endurance limits of suitable materials, engaging the lead screw and actuating the control rod. The United Harmonic Drive principle gives precise motion control with positive position indication and offers mechanism and system cost savings.

HERMETICALLY SEALED VALVES

United's Harmonic Drive principle has also been applied to valve actuation. The new principle uses a United Harmonic Drive linear actuator to position the valve plug. Test results on a hermetically sealed valve for design pressures up to 3000 p.s.i. at 600°F have proven reliability. United Harmonic Drive is readily adaptable for a wide range of valve sizes.

RESEARCH . . . DESIGN . . .

REFUELING SYSTEMS

United's experience in the design and development of both wet and dry reactor refueling systems includes such projects as submarine reactors, two shipboard reactors and the first large scale commercial nuclear power plant (PWR).

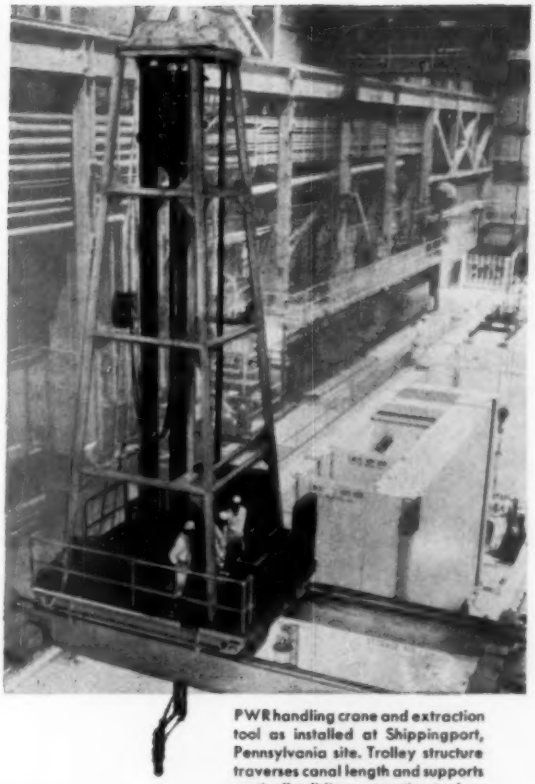
Systems designed and built by United:

Equipment for replacing individual reactor core elements within the submarine Triton's hull.

Manually operated equipment for shipboard reactors using an underwater periscope for positioning. Equipment is segmented for easy installation and storage.

Refueling system for the PWR at Shippingport, Pennsylvania. Remote controlled handling tool is guided down through 30 feet of water, through the vessel head to the hot core. Precisely locates and easily extracts or inserts any of 145 fuel cells. . .even those which are offset sharply from one of the 10 access ports.

WRITE FOR *illustrated folders that give full information and specific details on the equipment and components shown.*



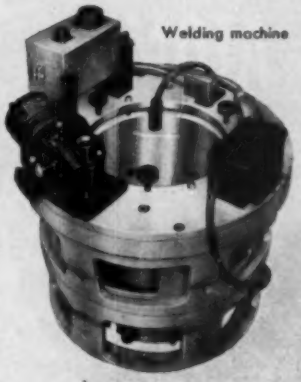
PWR handling crane and extraction tool as installed at Shippingport, Pennsylvania site. Trolley structure traverses canal length and supports vertically sliding extraction tool.

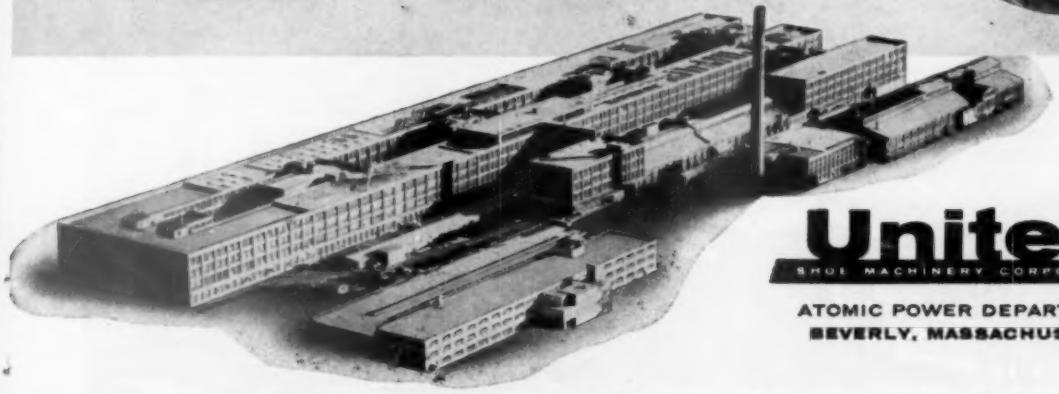
SEAL WELDING AND CUTTING EQUIPMENT

Cutting machine

The design and development of automatic seal welding and cutting equipment for nuclear reactors is an important activity at United. One such development involved the design and manufacture of cutting and welding equipment using consumable inserts for the U. S. Navy submarine Triton (S4G). Equipment will cut and re-weld 11 inch diameter welds on the control rod drive mechanisms at the various angles. A control unit provides automatic sequencing of welding operations and the design of the welding unit allows use in spaces as close as 1¾ inches from weld to adjacent mechanisms. Equipment can be operated with any or all control drive mechanisms in place and its reliability eliminates the necessity for radiographic inspection.

Welding machine





United
SHOE MACHINERY CORPORATION

ATOMIC POWER DEPARTMENT
BEVERLY, MASSACHUSETTS

TEST. . . . MANUFACTURE

In 1952 Pioneer joined with other groups, all reporting to the Atomic Energy Commission, for constant study of atomic energy application. Today Pioneer is qualified as a consultant to industry in the application of atomic reactor systems to the generation of electric power. Presently, Pioneer is acting as architect-engineer and supervisor of construction of the 66,000 kw commercial atomic power plant shown here. Allis-Chalmers Mfg. Co. is the prime contractor. Scheduled for 1962 completion, the plant, for the Northern States Power Co., will be known as the "Pathfinder".

Organized as Central Utilities Atomic Power Associates, these utilities will share in the research and development costs: Northern States Power Co., Central Electric and Gas Co., Interstate Power Co., Iowa Power and Light Co., Iowa Southern Utilities Co., Madison Gas and Electric Co., Mississippi Valley Public Service Co., Northwestern Public Service Co., Ottertail Power Co., St. Joseph Light and Power Co., Wisconsin Public Service Corp. **PIONEER SERVICE & ENGINEERING CO.**, 231 South La Salle Street, Chicago, Illinois.

ATOMIC PROGRESS

THROUGH

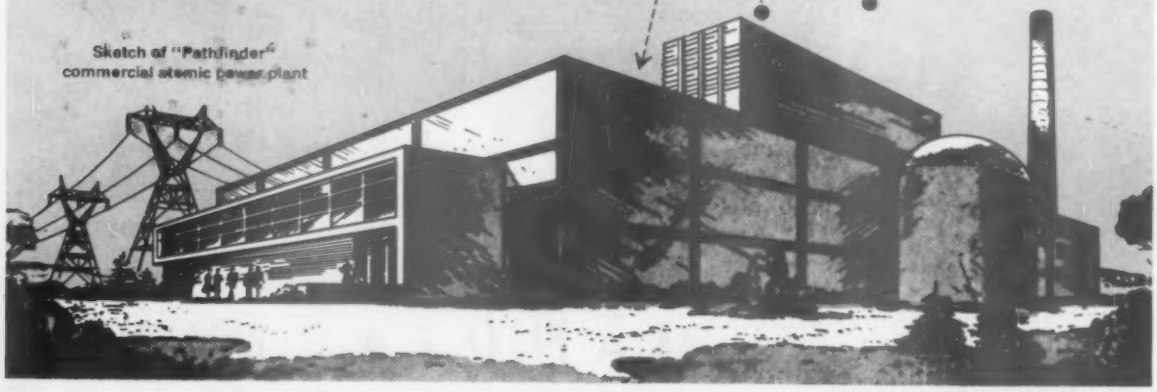
56 YEARS

Pioneer Service & Engineering Co.

231 South La Salle Street,
Chicago, Illinois

NEW!

On your letterhead, write for 40-page booklet, "Pioneering New Horizons in Power". Describes, illustrates Pioneer's engineering services, and corporate services, from financing to operation.



Sketch of "Pathfinder" commercial atomic power plant

REACTOR CONTROL INSTRUMENTATION

DR Series—Complete instrumentation for start-up, continuous operation and safety shut-down of nuclear reactors.

SPECTROMETRY INSTRUMENTATION

DZ41—Gamma Ray Spectrometer: Reduces background as much as 95%. Resolves elements as close as 50 Kev. High stability and reproducibility.

DZ48—Automatic Gamma Ray Spectrum Recorder: Single or repetitive scan operation: five selective scan speeds: selective partial spectrum scan. Provisions for 10 mv or 0-1 ma graphic recorder.

Scintillation detectors and well-type counters available as accessory items for spectrometers.

COUNTING INSTRUMENTATION

DM4—Count Rate Meter: Seven full scale ranges to 200,000 cpm. Responses: 3, 10, 30, seconds. Input sensitivity variable from 0.1 to 5v negative.

DS8—Precision Binary Scaler: Precision discriminator 0-100v positive, 0-50v negative; scale-of-64 or scale-of-8 panel selection; self-contained B plus and mechanical register.

RESEARCH INSTRUMENTATION

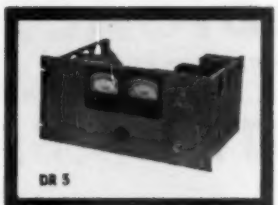
DZ4—Coincidence Circuit: Resolving time: FAST Channel, 0.01 microsec. to several microsec.

DA8—High Gain Amplifier: Write for Technical Data relative to the new Detectolab non-overload pulse amplifiers. Provides the greatest non-overload factor (4000) of any instrument currently available.

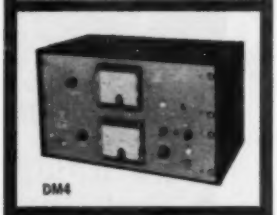
PRESSURE and TEMPERATURE SENSING SYSTEMS

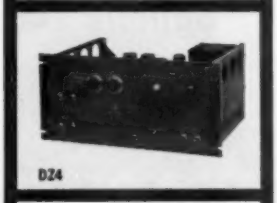
For any application involving the sensing of pressure or temperature inquire regarding measurement systems comprised of Vibrotron Digital Transducers. These miniature, electronic, sensing devices apply the basic engineering principle of the vibrating wire to sense changes in pressure, temperature, etc.

Output in the form of a frequency signal is provided for direct readout as a numerical value. These transducers are suitable for use in areas of radioactivity. Units manufactured from special materials to meet specific requirements may also be obtained.


DR 5

DZ48


DM4


DZ4

Sensing Systems

BJ ELECTRONICS

B-W

BORG-WARNER

For Expanding Nuclear Applications

Internationally-known DETECTOLAB* Products comprise a wide variety of general laboratory instruments to meet virtually every need of the nuclear scientist. New instruments to keep pace with changing requirements and improved versions to enhance the versatility of current models are in advanced developmental stages. Whether standard products or special systems, Detectolab signifies precision and reliability in every field of nuclear endeavor.

DETECTOLAB INSTRUMENTS ARE PRODUCTS OF

BJ ELECTRONICS

BORG-WARNER CORPORATION

Reliability you can count upon

3300 NEWPORT BLVD., SANTA ANA, CALIFORNIA

*Borg-Warner Corp. T.M.

Packard RADIOACTIVITY DETECTION INSTRUMENTS

Tri-Carb* Liquid Scintillation Spectrometers

Tri-Carb Spectrometers are designed for counting tritium, carbon-14 and other beta-emitting isotopes. Up to 100 5-dram sample vials can be counted at each loading.

Tri-Carb Spectrometers are also available with manual sample chambers. Both automatic and manual models offer all the advantages of liquid scintillation counting—sensitivity, versatility, operational simplicity and ease of sample preparation.

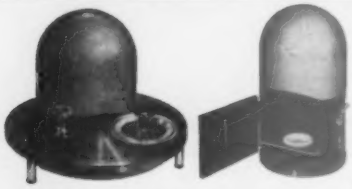
Auto-Gamma* Sample Changers

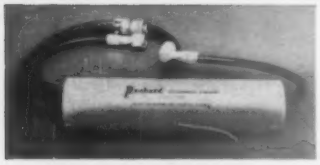
Auto-Gamma Sample Changers are designed for use with standard well-type scintillation detectors. Up to 100 test tubes (16 mm x 150 mm) can be counted at each loading.

Auto-Gamma Sample Changers are available for many different systems. They can be provided as complete units with either large or small sodium iodide crystals. They can also be used with scintillation spectrometers and simple scaler systems.

Automatic Tri-Carb Spectrometers and Auto-Gamma Sample Changers can be operated 24 hours per day, seven days per week. Operation is on the basis of both preset time and preset count. Counting is stopped by whichever is reached first. Sample number, time interval and scaler readings are permanently recorded on paper tape. Scaler and readout circuits, similar in both instruments, are completely transistorized for utmost reliability.

REQUEST LATEST BULLETINS





WINDOWLESS and FLO-WINDOW* COUNTERS

...for geiger and proportional operation

Windowless Flow Counters provide maximum sensitivity and essentially unlimited life. Full 2π geometry is achieved.

Flo-Window Counters feature thin plastic windows for minimum absorption. Counting chambers are isolated from the samples so that static charge, vapor effect, contamination, etc. are eliminated.

Completely Transistorized Proportional Counting Amplifiers

These non-overloading amplifiers are designed for use with proportional counters. They provide a gain of 1100 and are small enough to be conveniently located with the detectors, thus eliminating preamplifiers.

*Trademarks

Packard Instrument Company, Inc.

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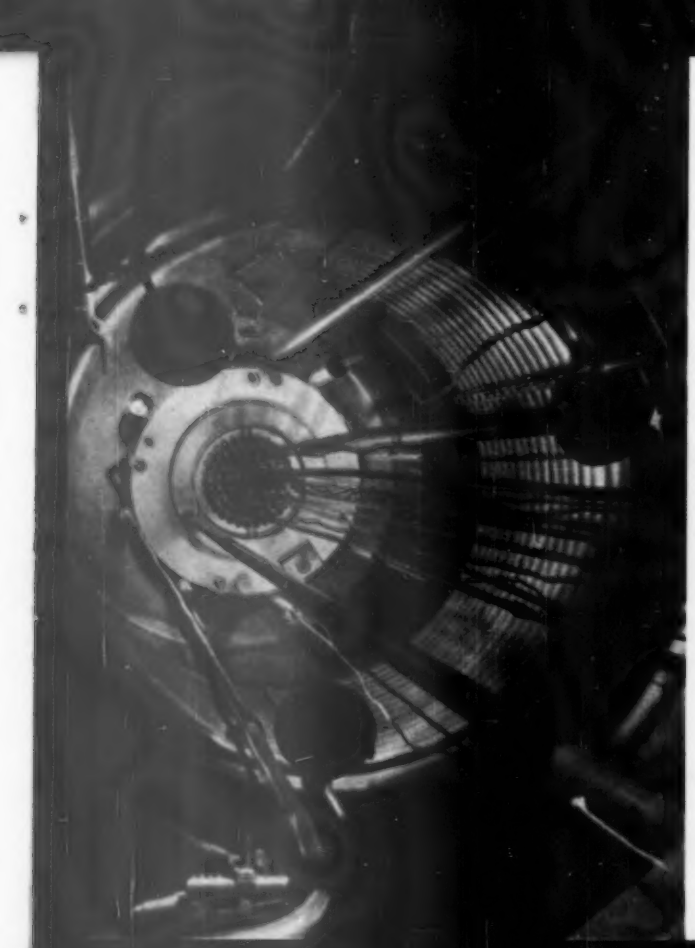


TRIGA

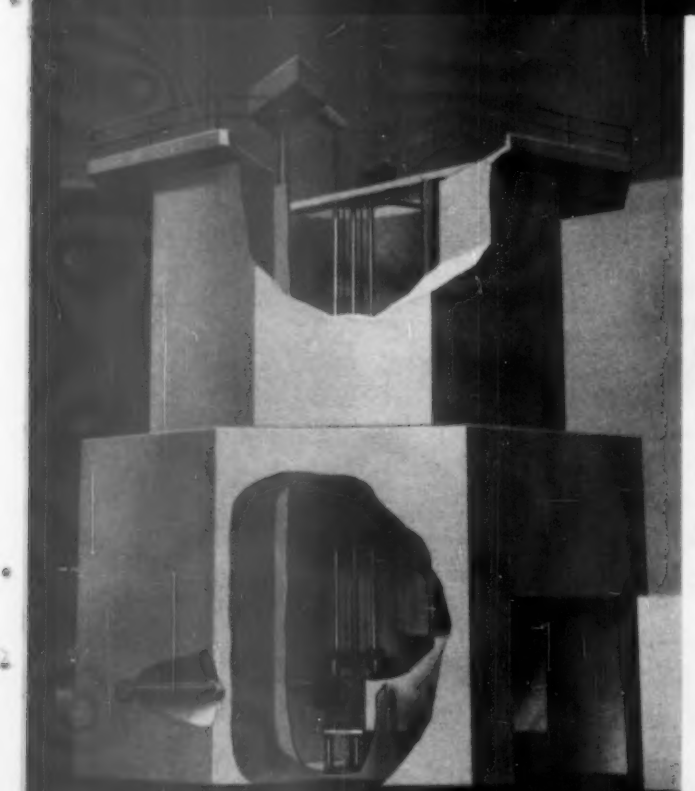
General Atomic's TRIGA reactor – its inherent safety and versatility demonstrated for tens of thousands at the Geneva Conference – is available in the below-ground version or the above-ground TRIGA Mark II version.

Designed specifically for use by academic institutions, medical centers and research laboratories, a TRIGA has gone critical on the University of Arizona campus. A TRIGA Mark II is being built for the new center in Rome of the Italian National Committee for Nuclear Research.

With a steady state power range of 10 to 100 kilowatts, TRIGA offers facilities for experimentation in broad fields of nuclear research, including activation analysis, reactor statics and kinetics, radiation shielding, radiation effects on materials, cross-section measurements, isotope applications, neutron diffraction, time of flight, and radiobiological effects.

The inherent safety of TRIGA is achieved by use of a solid homogeneous uranium-zirconium hydride fuel-moderator element developed at General Atomic's John Jay Hopkins Laboratory for Pure and Applied Science.

. . . for training, research and isotope production



In recent transient test experiments at San Diego, as much as 2 dollars of excess reactivity was introduced suddenly. TRIGA attained momentary power levels of 250 megawatts on a 9.8 millisecond period. The self-regulating mechanism promptly acted to reduce the power level by more than a factor of 1,000 without insertion of any control rods, thus dramatically proving the inherent safety.

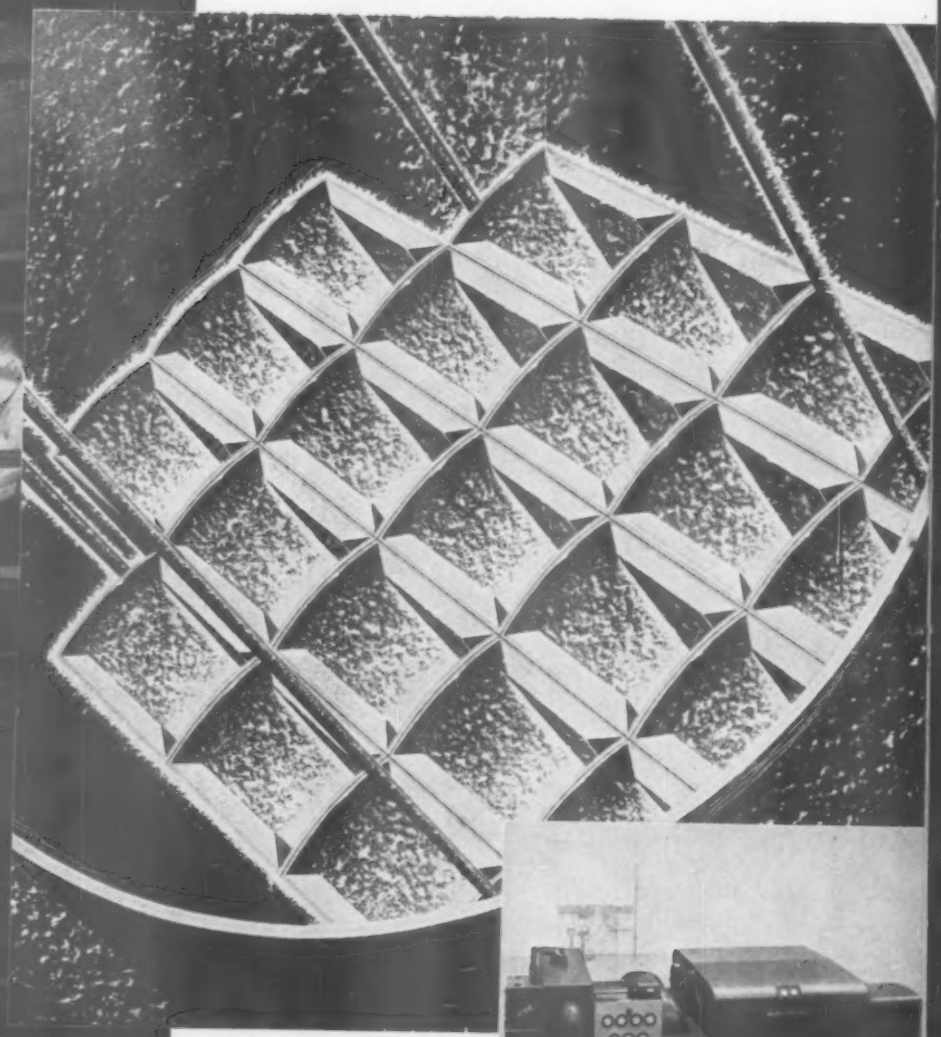
TRIGA answers the need of academic and research institutions for an economical, multi-purpose reactor of proven capabilities. Complete specifications and full information concerning operating characteristics are available upon request.

GENERAL ATOMIC
DIVISION OF
GENERAL DYNAMICS

SAN DIEGO 12, CALIFORNIA

**Research, development and production in the nuclear field
Basic research in the sciences Advanced fission power systems
Controlled thermonuclear research Nuclear propulsion for space applications Nuclear power plant for marine propulsion
Research and isotope reactors**

NUCLEAR



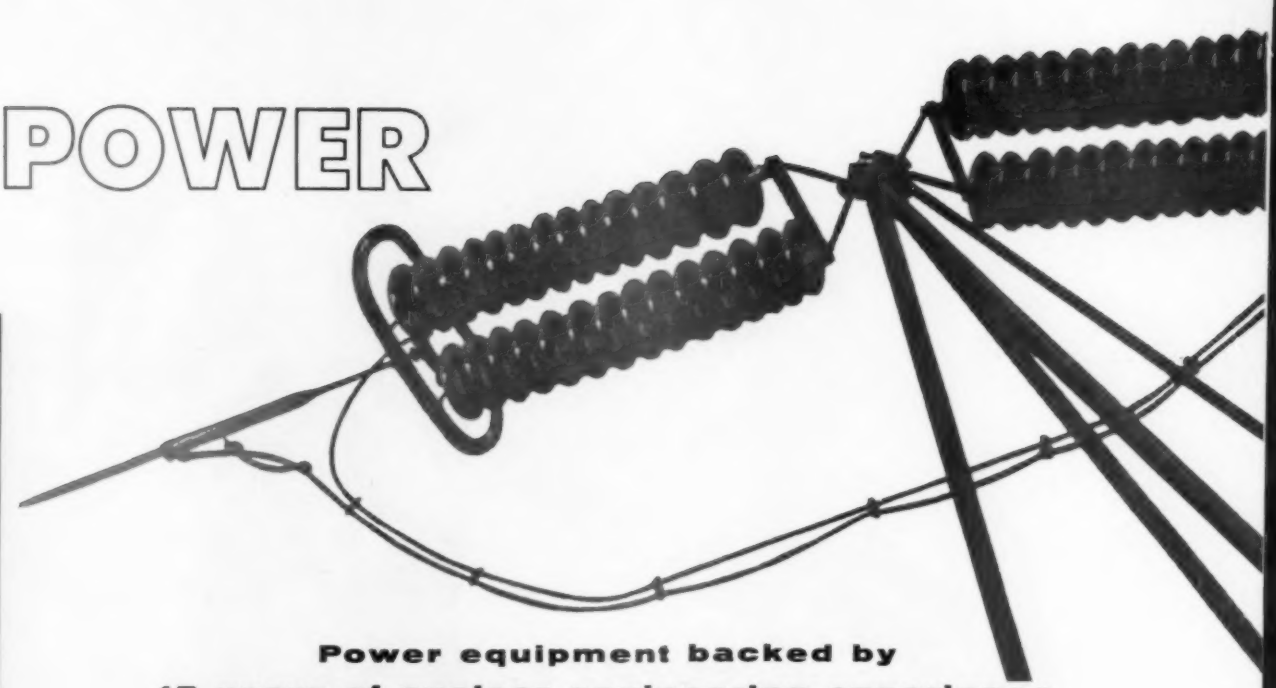
Reactors

Steam Turbine Generators

A-C
ALLIS-CHALMERS

A-5790

POWER



Power equipment backed by 15 years of nuclear engineering experience

ALLIS-CHALMERS development of nuclear reactors and allied equipment is a logical outgrowth of 75 years of building basic power equipment.

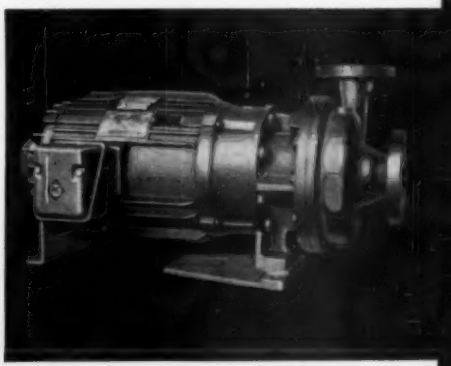
With nuclear experience dating back to the Manhattan Project, facilities, engineering, and production skills are being utilized to produce nuclear power equipment with the same high standards that identify A-C steam turbine generators, condensers, pumps, water conditioning equipment, control, switchgear, breakers, and transformers.

Allis-Chalmers is now engaged in the design and will construct a 66,000-kilowatt nuclear power plant* for the Northern States Power Company in cooperation with ten other electric companies.

Equipment and engineering for all nuclear power plant needs . . .

Condensers

Control and Switchgear

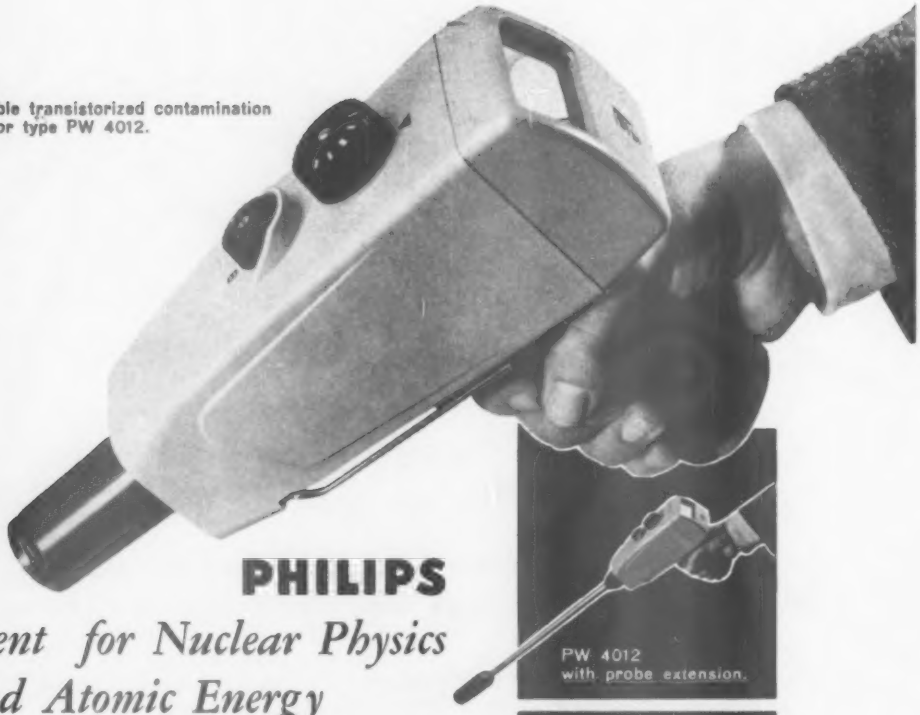


Nuclear Pumps

ALLIS-CHALMERS

*A model of a nuclear power plant using a Controlled Recirculation Boiling Reactor with nuclear superheater will be featured in the Allis-Chalmers exhibit in the United States Exhibition Area, Geneva Atoms for Peace Exhibition.

Portable transistorized contamination monitor type PW 4012.



PW 4012
with probe extension.

PHILIPS

equipment for Nuclear Physics and Atomic Energy

This rugged, watertight and tropicallized battery-operated instrument incorporating the Philips G.M. counter tube type 18503 has been designed for the detection and measurement of radio-activity in such applications as:

- **General radiation intensity checks in isotope laboratories, around isotope containers etc.**
- **Contamination checks of benches and apparatus.**
- **Radiation exposure measurements of personnel working with isotopes or X-rays.**

It incorporates the following features:

- **Three measuring ranges resp. 0-1, 0-10 and 0-100 mr/h (Ra γ).**
- **Compensation for voltage drop during battery life ensures maintenance of accuracy.**
- **Provision to insert probe extension.**
- **Beta sensitive G.M. tubes 18504 (2-3 mgr/cm²) and 18505 (1.5-2 mgr/cm²) can be used as well.**
- **Large, easy readable and shock-proof measuring instrument.**

- Synchro-cyclotrons for various final energies.
- Cockcroft-Walton accelerators.
- Generators for very high d.c. voltages.
- Linear electron accelerators.
- Reactor control instrumentation
- Radiation measuring and detection equipment.
- Civil defence instruments.
- Area monitoring instrumentation.
- Geiger counter tubes.
- Photomultipliers.
- Radio-active isotopes.
- Air & gas liquefiers.

PHILIPS

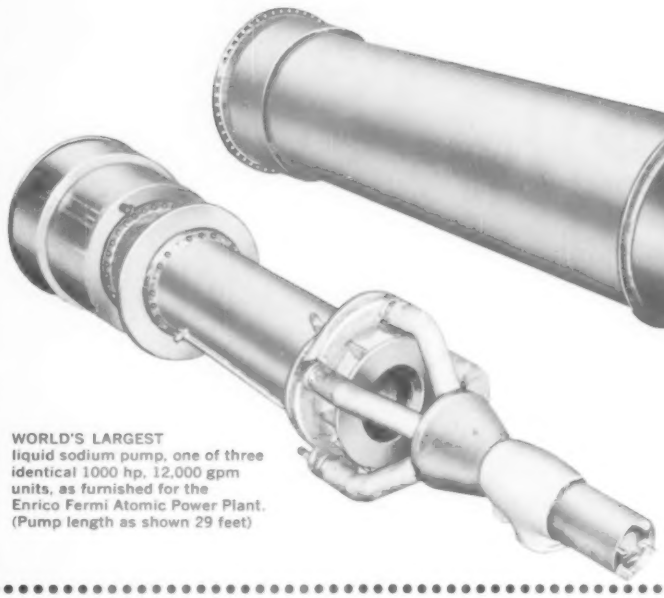
Nuclear Equipment

For further information please apply to:

N.V. PHILIPS GLOEILAMPENFABRIEKEN,
Scientific Equipment Department, Eindhoven-Holland
RESEARCH & CONTROL INSTRUMENTS LTD.
Instrument House, 207/215, King's Cross Road. London WC 1

PHILIPS

NPO



WORLD'S LARGEST
liquid sodium pump, one of three identical 1000 hp, 12,000 gpm units, as furnished for the Enrico Fermi Atomic Power Plant. (Pump length as shown 29 feet)

LIQUID METAL PUMPS

Byron Jackson's
of various pump des
metals. While the pu
pressure and the cap
maximum economy a

Using an inert-g
maintain zero gas lea

Other zero leaka
motor-pump units—v

BJ Liquid Metal
to 1600°F., and press

PULL FOR YOUR FILE

Three of six BJ Liner-Motor pumps for the National Reactor Testing Station, AEC, Idaho Falls. Rated at 30 hp, 2500 psig, 650°F.

LINER-MOTOR PUMPS

BJ offers a comp
engineered and manu
and experimental loo

The same basic
Liner-Motor pumps—
long, reliable service

Available in con
5100 psig and temper

A BJ Mechanically-Sealed Pump furnished to Argon National Laboratories for 2500 psig, 650°F. service.

MECHANICALLY-SEALED PUMPS

A mechanical sea
leakage and peak effi
reliable shaft seal for

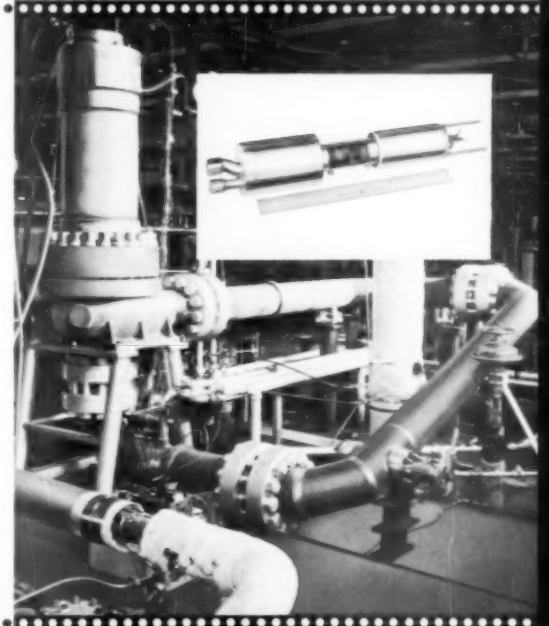
Byron Jackson's
particularly valuable,
2500 psig and temper

BJ
SINCE 1872

kson's leadership in the pumping of liquid metals has led to the development
np designs for handling liquid sodium, lead, bismuth and other molten
the pump for a given job depends upon system geometry, temperature,
he capacities required, a BJ vertical, mechanically-sealed pump can provide
nomy and reliability.
inert-gas back up, this design incorporates a BJ Mechanical Seal to
gas leakage to atmosphere.
o leakage designs for liquid metals include hermetically sealed,
nits—with either oil or gas filled motors.
l Metal Pumps are available in capacities from 10 to 50,000 gpm, temperatures
d pressures as required.

Two of six similar BJ Liquid Metal Pumps built for 1500°F. service. The units shown are rated at 700 hp, 4000 gpm.

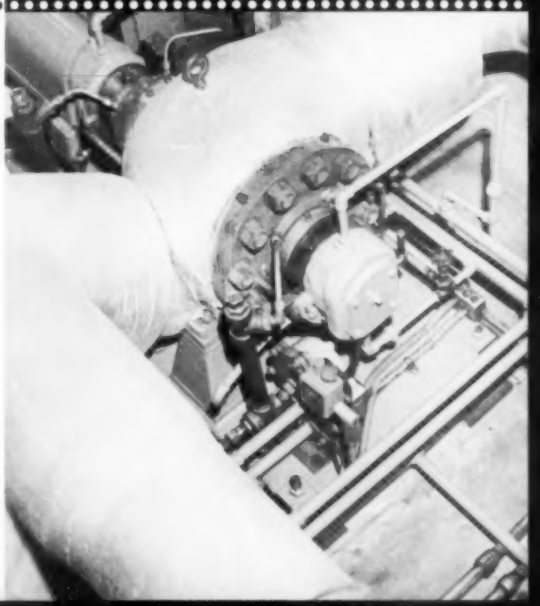
a complete line of hermetically-sealed, integral liner-motor pumps—
d manufactured for the demands of zero leakage in nuclear power service
tal loop testing.
basic design and heavy-duty construction is furnished on all BJ
umps—with even the smallest sizes featuring double thrust bearings for
ervice and operation in any position.
in complete range of sizes from ¼ to 600 hp, and with pressures to
temperatures to 700°F.



500 hp liner-motor pump ready for hot test on one of the BJ test loops. Pump is rated at 650°F., and 2500 psig.

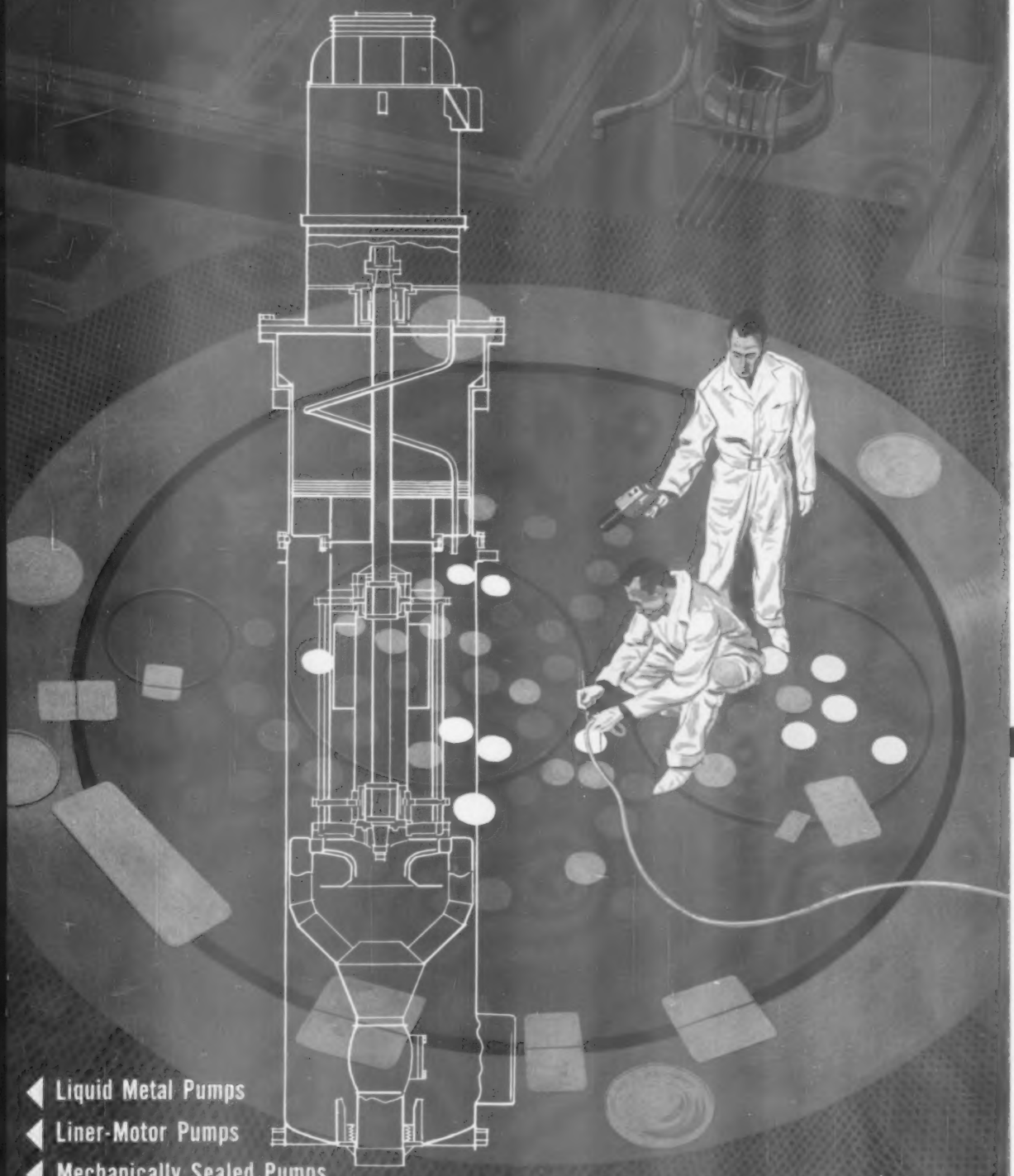
(Inset) This compact, two-stage BJ Pump was developed for an extremely limited space application, handling uranium sulphate at system pressures of 2000 psig. Rated at ¼ hp, 3500 rpm and 600°F.

ical seal is the most economical means of combining minimum controlled
eak efficiency in nuclear pumping. It can now be considered as a completely
eal for use in primary circulating pumps of full scale power reactors.
kson's long experience in building mechanically-sealed pumps can be
luable, with current nuclear pumps of this type operating at pressures up to
temperatures to 650°F.

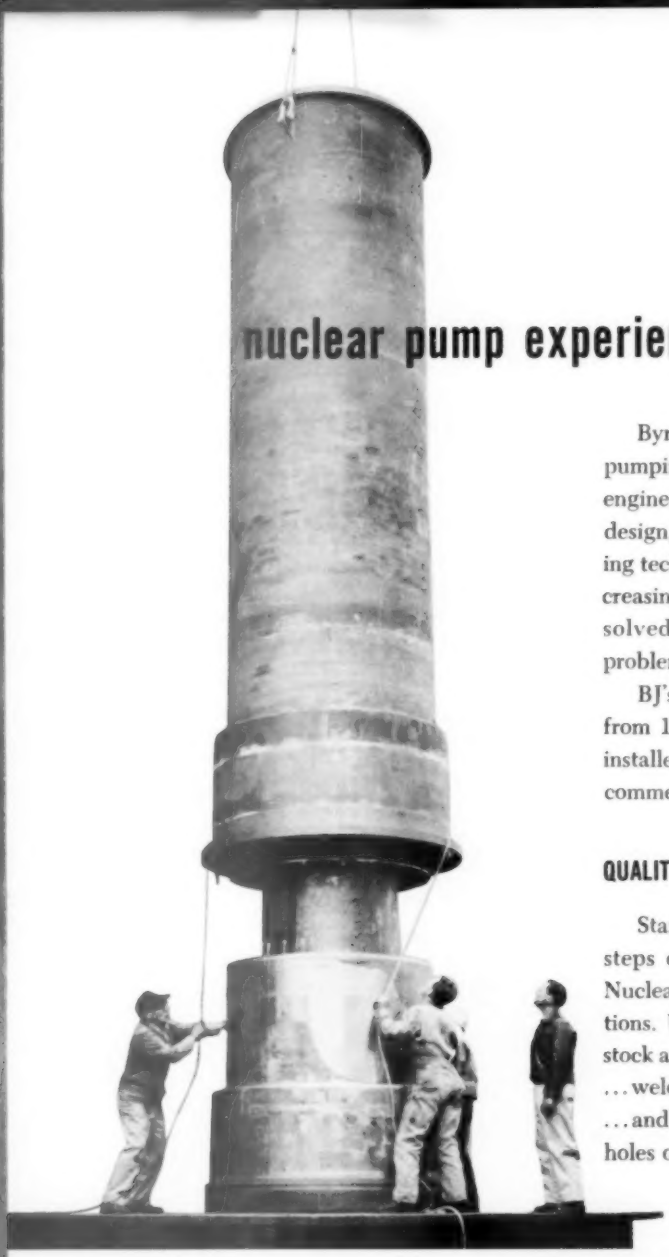


A horizontal, mechanically-sealed BJ Pump driven by a standard motor. Installed at Canadian General Electric, it is designed for heavy water under 1200 psig suction pressure, 600°F. temperatures.

BJ NUCLEAR PUMPS



- Liquid Metal Pumps
- Liner-Motor Pumps
- Mechanically Sealed Pumps



nuclear pump experience you can count on...

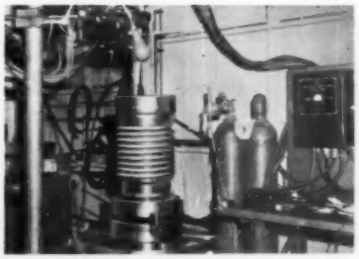
Byron Jackson's authority in the field of nuclear pumping comes from over 86 years of continuous engineered pump-building experience. The basic design, metallurgy, engineering and manufacturing techniques perfected by BJ in meeting the increasing demands of industry over the years have solved many of the unique nuclear pumping problems.

BJ's actual nuclear pump experience dates from 1944, and as a result, BJ Pumps are either installed or have been specified for every major commercial reactor in the United States.

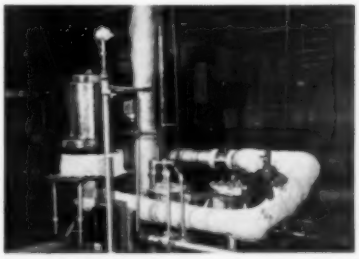
QUALITY CONTROL

Starting with material selection, through all steps of construction and final inspection, BJ Nuclear Pumps must meet or exceed all specifications. Ultrasonic quality plate, forgings and bar stock are used... castings are radiographic quality ...welds are x-ray quality with inert gas back-up ...and internal surfaces are free of roughness, pin holes or protrusions.

Typical of BJ's quality control facilities is this helium mass spectrometer, shown leak testing a liner-motor pump.



Maximum welding quality, as well as production efficiency, is assured with equipment such as this automatic, inert-gas welding head on a movable platform.



Pumps are hydraulically and hydrostatically tested to rated conditions in BJ's own laboratory. Hot and cold loop testing facilities to 10" are provided, with the 4" hot loop shown.

BJ
SINCE 1872

BYRON JACKSON PUMPS
INCORPORATED
A subsidiary of Borg-Warner Corporation
P. O. Box 2017A, Terminal Annex
Los Angeles 54, California

The DS8 basic scintillation detector weighs less than 5 ounces, and is just 1" in diameter.

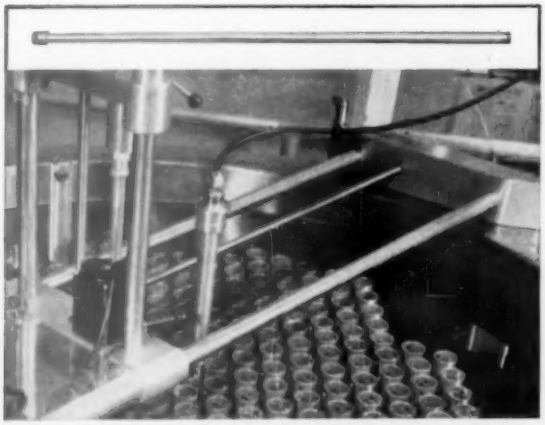
Versatile New Scintillation Probe Detects Fast or Slow Neutrons, Gammas, and Betas

Completely new, the Nuclear-Chicago Model DS8 Scintillation Probe provides precision detection of fast or slow neutrons, gamma and beta radiation. Utilizing a unique new 10 stage, ¾" photomultiplier tube and a completely transistorized electronic circuit, the probe is completely water tight and corrosion proof. A resolution time in the microsecond region permits its use in extremely high radiation fields.

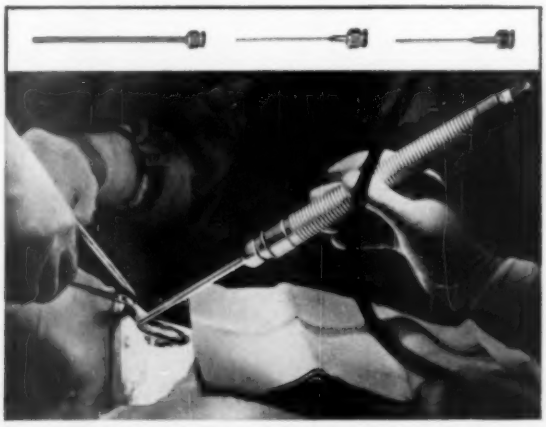
Two neutron probes are offered for flux measurements in reactors or subcritical assemblies. The neutron sensitive volume is confined to the very ends of the 42" probes so that "point" measurements may be made easily. Probe housings are quickly removed to permit substitution of slow neutron or fast neutron sensitive phosphors. These long probes can also be supplied with sodium iodide crystals for gamma detection.

Three needle probes with 2.5 mil wall thicknesses are available for beta and gamma detection. They are unequalled for measuring radiation in almost inaccessable areas where highest resolution is essential.

For more than 12 years we have been designing and manufacturing high quality, dependable instruments for detecting and measuring radioactivity. We will be glad to furnish you complete information on this new DS8 Scintillation Probe or on other Nuclear-Chicago instrumentation or our Research Quality Radiochemicals.



Shown here being used with Nuclear-Chicago Model 9000 Subcritical Training Reactor to measure slow neutron flux at various points in the lattice, neutron probes are 42" long and are available in two diameters, ¾" and 11/32".



Shown here in use during thyroid surgery, Model DS8 is offered with three beta-gamma sensitive needle probes 2 mm, 3 mm and 6 mm in diameter, 10 cm to 15 cm in length. All probes are easily interchanged by loosening a simple hand nut.

Fine Instruments - Research Quality Radiochemicals

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CORPORATION

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SPECIALIZATION BY RELIANCE

All Reliance radioactive waste containers (like this 5 curie liquid cobalt 60 container and its accessories) are safety-engineered to the exacting standards of I.C.C. 55, U.S. Bureau of Explosives, U.S. Coast Guard and A.E.C.

Assures you of finer products... faster, more dependable service

Reliance specializes in serving nuclear research and the nuclear industry. Whatever your needs, from radioactive waste containers to gamma probing, you can depend on Reliance for complete satisfaction. Why not let us show you how Reliance can serve you better? Write, wire or telephone now for complete information . . . no obligation.

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- RINGS
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- HIGH-DENSITY LEAD PRODUCTS IN STOCK FOR IMMEDIATE SHIPMENT
- *Now . . . capacity to pour 100,000 lbs. of lead per single unit.*

Safety-engineered products
for nuclear research and development

RELIANCE
INCORPORATED
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Now available . . .

Van de Graaff electron accelerator recently installed at Shell's Emeryville Research Center is one of the most powerful sources of radiation available to industry.

a radiation-resistant grease for commercial nuclear applications

SHELL APL GREASE

Nuclear applications bring new complexities to the field of industrial lubrication. Not only is the lubricant required to withstand unusual service with respect to temperature, speed, load and oxidation, but it is also exposed to the damaging effects of neutron and/or gamma or beta radiation.

To meet this challenge, Shell Research has developed a practical radiation-resistant grease for use in nuclear reactors and their component parts . . . Shell APL Grease.

In Shell Laboratories, comprehensive tests have been conducted with the aid of a three-million-volt electron accelerator, one of the most powerful radiation sources in industry.

Gamma ray tests have shown that APL Grease will withstand an accumulated dosage of 1 x 10^9 roentgens. Another valuable finding reveals that APL Grease has superior thermal stability . . . it lubricates efficiently at 300 degrees Fahrenheit.

APL Grease is further proof of Shell's leadership in lubrication technology—and your assurance that Shell Research is ever vigilant to the pulse of industry progress.

SHELL OIL COMPANY

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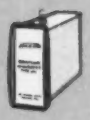
SHELL

Indicating Motion-Balance Transmitters
...for flow, pressure, and level



Thermocouple and Resistance Bulb Converters
...magnetic amplifiers
...no vibrators
...no mechanical rebalancing

Displacer Level Transmitters
...force-balance for simplicity

Control Valves
...with electro-pneumatic and electro-hydraulic actuators

FORCE-BALANCE TRANSMITTER
The Electronic d/p Cell* Transmitter measures flow, pressure or level and converts to d-c signal. Amplifier, shown here integrally mounted, may be separately mounted in an accessible area. Combines the simplicity, sustained accuracy and repeatability of force-balance measurement with the speed and convenience of electrical transmission.

*Trademark

FOXBORO Electronic

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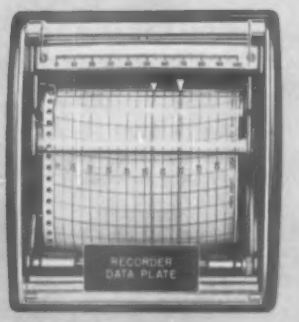
CONTROLLER
Electronic Consotrol Controller concentrates all control and supervisory functions in one slim 3 x 6 inch case. Operation is entirely independent of recorder; but both may be enclosed in a single 6 x 9 inch housing with independent pull-out.



RECORDER
Electronic Consotrol Recorder (shown ¼ actual size) uses the simple, powerful Dynatorque pen motor which can be operated directly from transmitter signal without amplification. Available in 1 or 2 pen models.

for the first time... the 100% solid state electronic system!

- choice of force-balance and motion-balance transmitters
- thermocouple and resistance bulb converters-using magnetic amplifiers
- long time-constant tubeless controllers

Consotrol Instrumentation

Electronic Consotrol* Instrumentation—the most complete and advanced family of electronic-operated measurement and control instruments available today! That just begins to describe Foxboro's dramatic new advance in instrumentation. ✓ ✓ ✓ Foxboro electronic transmitters, indicators, recorders, control stations, computing stations, valve actuators and other final operators cover every function in the control loop. All are linked by a d.c. current signal. All are completely tubeless. Even thermocouple and resistance-type systems no longer require vacuum tubes. ✓ ✓ ✓ Electronic Consotrol systems convert temperature, pressure, flow, level measurement, etc., to a proportional signal at the transmitter. Transmission to a remote control station is instantaneous—using an electronic motion-balance or force-balance transmitter. Designs are available for both accessible and inaccessible areas. ✓ ✓ ✓ Electronic Consotrol Instrumentation heralds a whole new era in control engineering. Write Foxboro today for the new 32-page Catalog 21-10 which gives full details.

The Foxboro Company, 6211 Neponset Ave., Foxboro, Mass., U.S.A.

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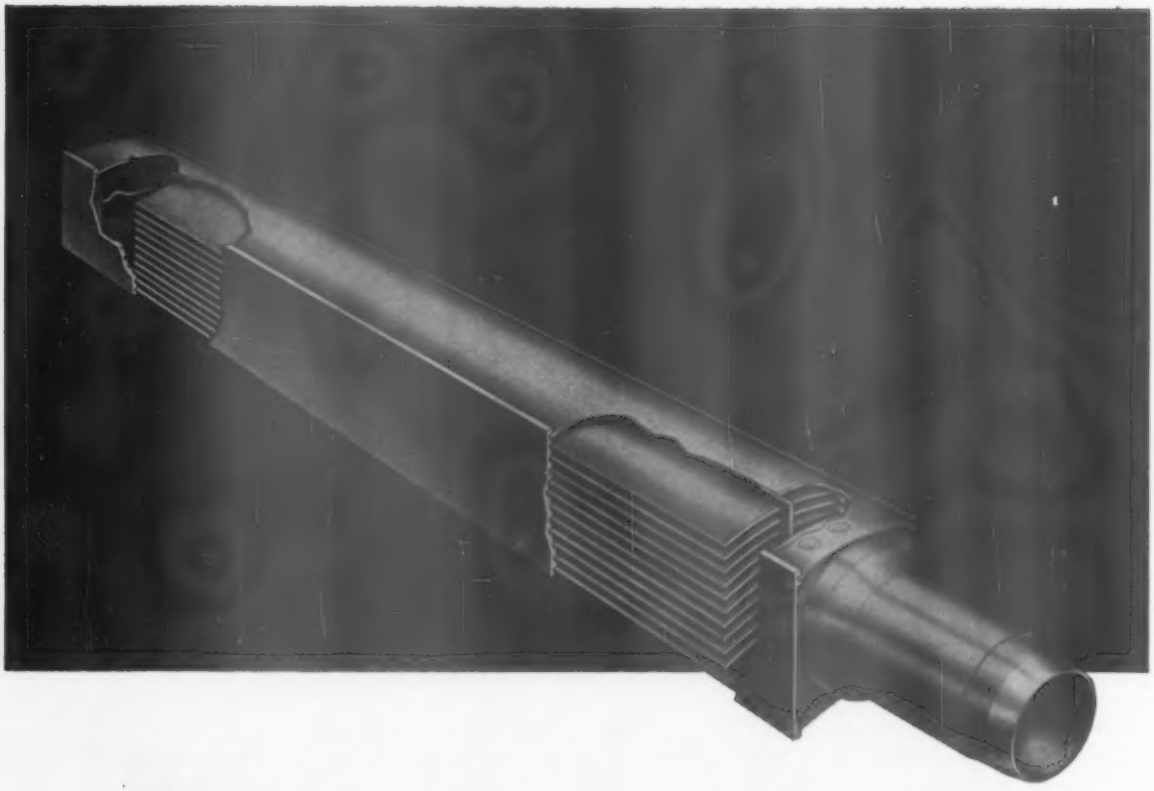


B&W Experience Assures Quality

More Than 1500 Fuel Elements Supplied to Nuclear Industry

In the design and operation of a nuclear reactor, there is nothing more reassuring than the knowledge that the products used in the reactor system are of the highest quality obtainable. This is particularly true of the fuel elements, which are the heart of the reactor.

Since entering the field of fuel element fabrication with the first privately financed facility for this purpose in the United States, B&W has supplied more than 1,500 fuel elements to more than a dozen reactor installations, both in this country and abroad. B&W pioneered in the manufacture of fuel elements for export containing uranium metal enriched to 20 per cent in U-235.

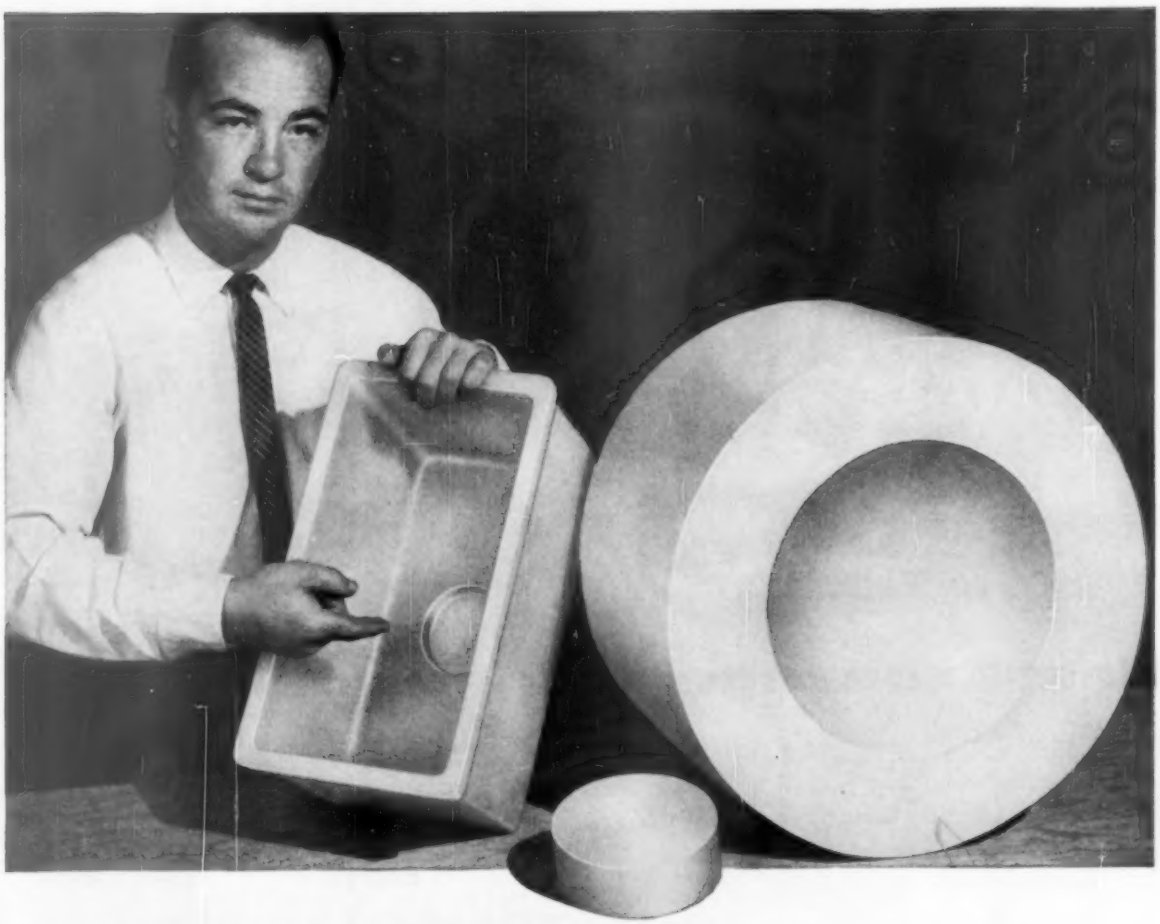
The manufacture of fuel elements at B&W is supported by almost 100 years of related experience.

Direct your inquiries to The Babcock & Wilcox Company, Boiler Division, 161 E. 42nd Street, New York 17, N. Y.

BABCOCK & WILCOX

BOILER DIVISION

NC-100



PLASTIC MOLDINGS

ECONOMICAL PRODUCTION . . . UNLIMITED SIZE AND SHAPE

Whether your need is for intricate shapes machine finished to close tolerances, or "slugs" of rough dimensions for further working in your plant, CONNEAUT can produce the parts you require from thermoplastics such as Polyethylene and Nylon.

Compound formulations may be varied to meet specific design requirements. For example, additives such as Elemental Boron, Boron Carbide, Lead Oxide, Cadmium Oxide, etc., can be incorporated into the compound for various nuclear applications.

Typical of the virtually unlimited range of shapes and sizes are the items shown. They may be produced economically in small quantities for experiment purposes or pilot operations. Large-quantity production runs of parts from five pounds to several hundred pounds each, can be molded by Conneaut at substantial savings over production methods requiring costly injection or compression molds. Write for more details, or send prints and details of your requirement for immediate analysis and recommendation. No obligation.

BROCHURE SENT ON REQUEST—

Contains illustrated information on Conneaut's plastic research and development laboratories, and complete plastics production facilities.

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Conneaut, Ohio **Phone 51-961**

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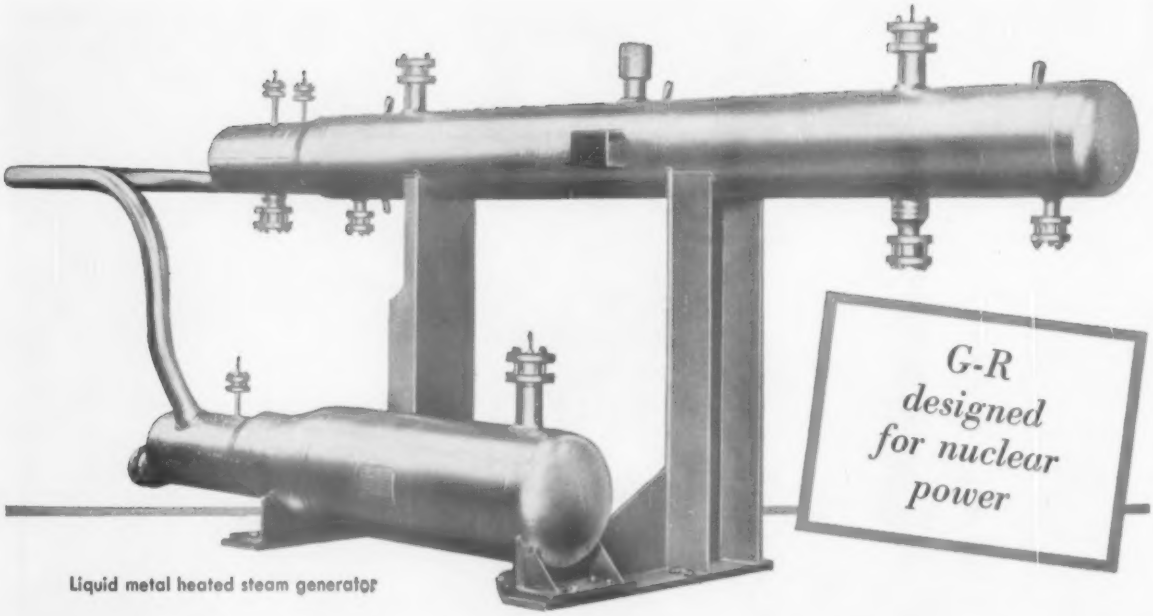


Liquid metal heated steam generator

Heat Exchangers for nuclear power

Griscom-Russell's active participation in the challenging field of nuclear power is typified by the liquid metal heated steam generator design shown above.

Griscom-Russell was selected to design and build this unit, as it has been selected many times previously, because of its background of over 80 years in the design and manufacture of heat exchange equipment and because of its pioneering work in the nuclear field.

These special designs, as well as more conventional high pressure and high temperature heat exchangers or some of G-R's specialized products, might be able to contribute to the efficiency of your next installation.

Consult your local G-R Representative for full details.

GR381

Griscom-Russell

GENERAL PRECISION EQUIPMENT CORPORATION GPE

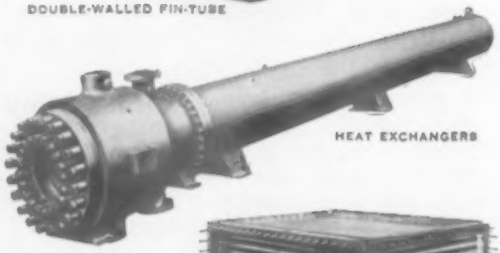
THE GRISCOM-RUSSELL COMPANY, MASSILLON, OHIO

A SUBSIDIARY OF GENERAL PRECISION EQUIPMENT CORPORATION

G-R Designs for Nuclear Energy

HIGH TEMPERATURE FIN-TUBE

DOUBLE-WALLED FIN-TUBE



HEAT EXCHANGERS

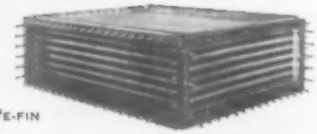


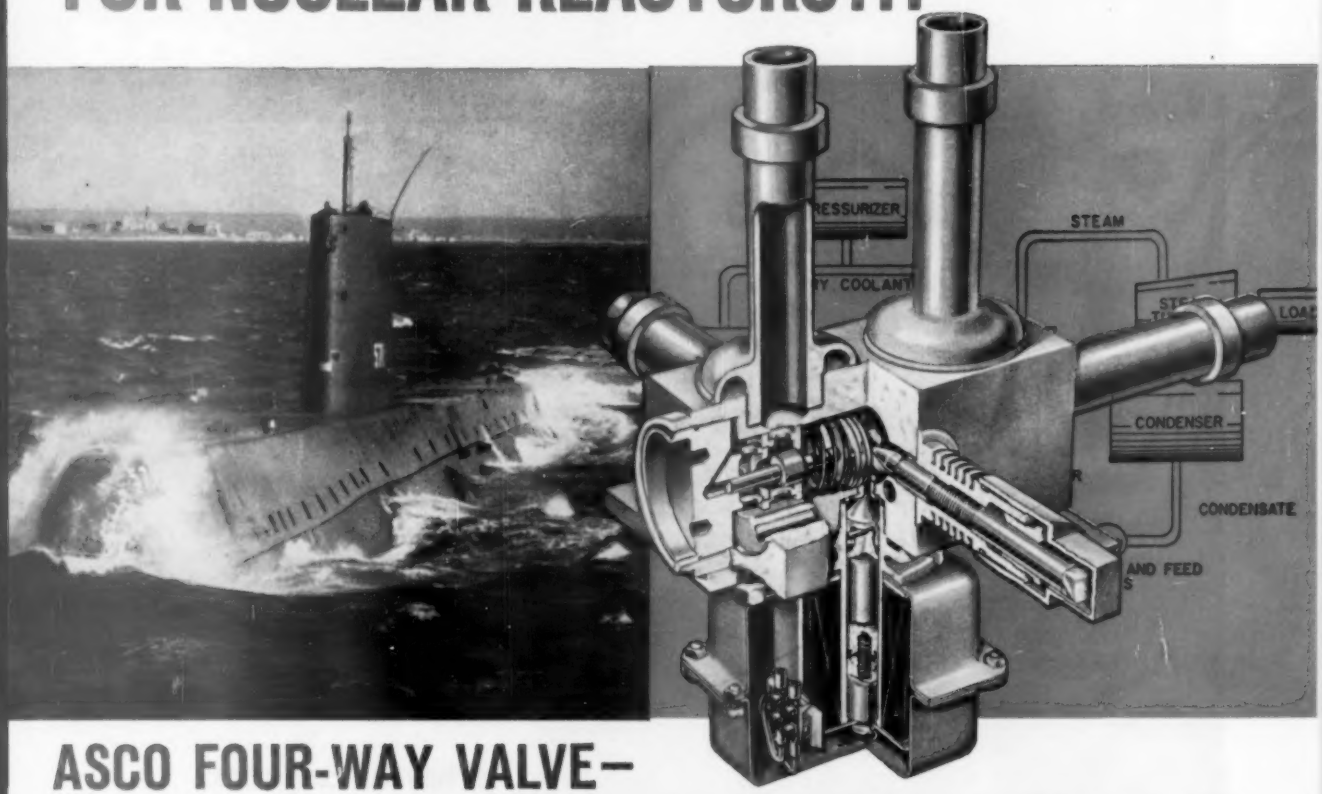
PLATE-FIN

Evaporators • Air Preheaters • Heaters and Coolers
Radioactive Waste Concentrators • Exchangers

HEAT EXCHANGE EQUIPMENT

FOR THE NUCLEAR INDUSTRY

SOLENOID VALVES FOR NUCLEAR REACTORS...



ASCO FOUR-WAY VALVE— CONTROLS ISOLATING VALVE IN CIRCULATING LOOP

From ASCO's nuclear energy facilities – the only ones in the Solenoid Valve industry to include a *hot test loop* – now comes a complete family of solenoid valves tailored to atomic energy requirements.

Typical is the 4-way valve illustrated above designed for the control of the main cylinder-operated isolating (stop) valve in the circulating loop. This stainless steel, packless type (hermetically sealed) valve features exceptionally tight seating—through beveled, poppet-type seats and discs. Solenoid pilot controlled and available with manual override, it is supplied in 1" size. This unit is suitable for 2500 P.S.I. differential pressure at 600°F.

Like all other ASCO Solenoid Valves designed for nuclear reactor systems, this valve has passed the most rigid tests under faithfully duplicated working conditions. ASCO 4-way Solenoid Valves are now in use on nuclear submarines powered with water-cooled reactors. Uniformly reliable and maintenance-free, ASCO 2, 3 and 4-way Valves are specified for primary and secondary systems of nuclear reactors, as well as for instrumentation control.

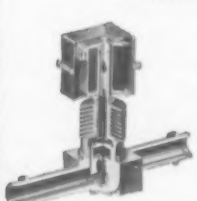
For further information, request "ASCO Valves for Nuclear Reactors" and Catalog No. 202.

ASCO®

Automatic Switch Co.
52-M Hanover Road, Florham Park, New Jersey
FRontier 7-4600

Typical ASCO Solenoid Valves for submarines, military and commercial surface ships, and industrial power plants:

Primary System



Relief Valve

By-Pass Coolant Valve

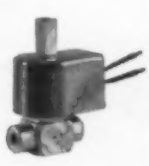
Secondary System

2-way Valves

3-way Valves

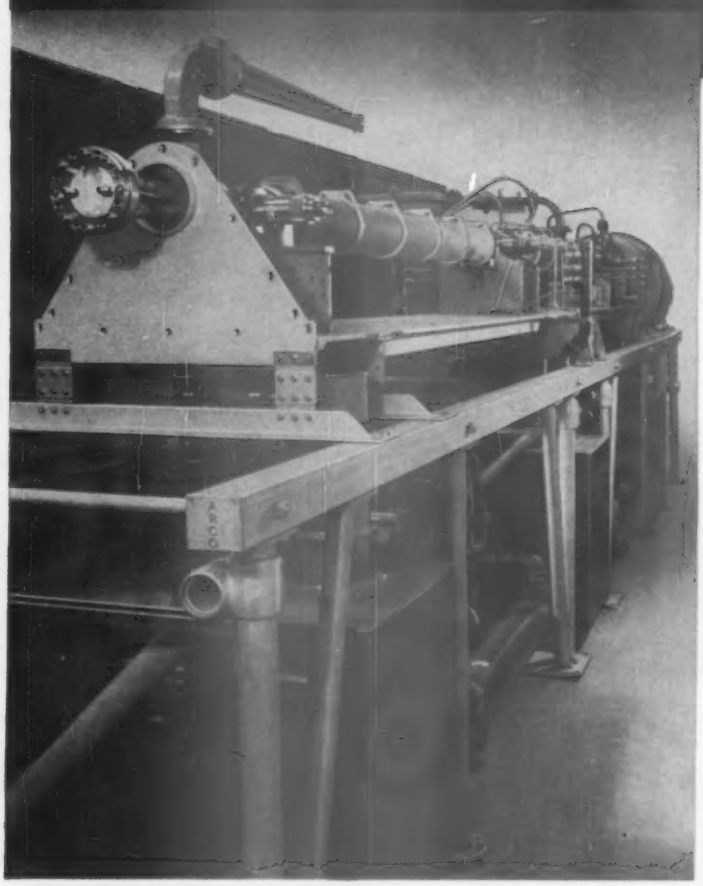
Instrumentation Control

2-way Valves



3-way Valves

ARCO High Energy and



ARCO

designs and manufactures high power, high energy particle accelerators and associated apparatus. Modular construction simplifies meeting individual needs for complete systems or individual components.

ELECTRON LINEAR ACCELERATORS

ARCO linear accelerators provide intense neutron, X-ray, and electron beams for neutron physics and sub-critical reactor core studies, and for basic investigations in solid state physics and radiation chemistry. Linear accelerators produce intense neutron pulses for time-of-flight studies. Photofission reactions are among the most efficient neutron producing reactions. Up to 3×10^{12} neutrons per second (average) can be produced per kilowatt of electron beam. Pulse yields are on the order of 1×10^3 greater.

In nuclear chemistry, precisely controlled bremsstrahlung permit investigations of photonuclear as well as neutron reactions. Pulsed electron beams are used in solid state physics to help evaluate radiation damage, and in radiation chemistry and food research to study free radicals and other short lived transients. ARCO accelerators provide the high beam energies needed for irradiation of pressurized systems and thick specimens, and the high power needed for low yield work.

ARCO is presently building electron linear accelerators with electron beam power variable to 48 kilowatts; beam energy variable to 77 Mev; and peak beam current variable to 0.8 amperes; pulse repetition rates to 800 pulses per second, with pulse lengths from 0.1 microsecond to 30 microseconds. ARCO is equipped to meet your needs, whether modest or exceeding these characteristics.

Particle Accelerators Associated Apparatus

COCKCROFT-WALTON ACCELERATORS

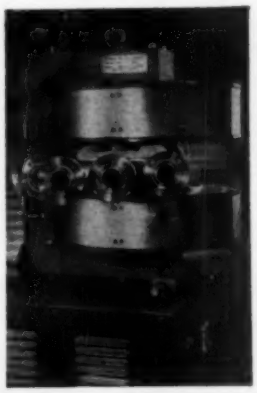
ARCO builds both electron and positive ion C-W accelerators. Electron accelerators are suggested for shallow irradiation where economy, dependability and ruggedness are required. Positive ion machines provide neutrons from thermal to 14 Mev, in addition to protons, deuterons, tritons, alpha particles and heavy gas ions. Pulsed beams are available over a wide range of lengths and repetition rates.
Machines can be supplied with beam energies from 40 to 800 Kev, beam current to 10 ma, neutron yields to 10^{11}n/sec., 0.1% regulation, and ion beam focus to 0.3 cm diameter.

POSITIVE ION LINEAR ACCELERATORS

Positive Ion Accelerators include equipment to continuously vary and regulate ion beam energy. Large electro-magnets are not used; therefore, large stray magnetic fields are avoided and main accelerator cavities may be added later to produce higher beam energies.
ARCO machines provide proton energy from 5 to 12 Mev, Deuteron energy from 2.5 to 6 Mev, peak beam current to 300 μa, and average beam current to 10 μa.

CUSTOM PRECISION ELECTROMAGNET SYSTEMS

ARCO builds electron and ion beam analyzing systems and specialized magnets; also builds integrated systems involving magnets, high vacuum systems, drift tubes and Faraday cup current collectors, providing energy resolution to 0.5%. Magnet field strengths are variable to 12,000 oersteds; current regulated power supplies are available with regulation of .1% or .01%.



HIGH VACUUM SYSTEMS

Non-refrigerated traps, metal-gasketed flanges, bellows-sealed valves and automatic shut-off and restart controls are features of all-metal ARCO vacuum systems. Components accept 450° C bakeout. Units are available as separate components. System ranges include operating vacuums from 10^{-6} to 10^{-9} mm Hg.; pumping speeds from 10 to 10^{3} liters/sec.

HIGH POWER DC SUPPLIES

ARCO designs and builds power supplies covering the range 100 KV to 3 Mev with output variable to 30 Kw.

SELF-CALIBRATING INTEGRATING ELECTROMETERS

ARCO AEI-101 current electrometer integrator is a single-chassis unit useful with particle accelerators as well as in integrating fluctuating light, velocity, flow, and other transducable factors. Desired integrated values can be preset. Input current range (+ or −) is 500 $\mu\mu$a to 1 ma covered in 6 decade ranges. Integrator range is 1 millimicrocoulomb to 100 coulombs. Accuracy is ±0.5% of current or charge reading. Input voltage is 0 ±2 mv, integrating rate varies from 1/sec to 1/minute; integrator drift is 0.1 unit/hr, output is 0 to 10 mv (current range) and 0 to 50 v on charge increments. Model AEI-101 is only 8¾" high, and fits a standard relay rack. Depth is 10".

ARCO IRRADIATION SERVICE CENTERS

At Rockford, Illinois, and Walnut Creek, California, ARCO irradiation facilities may be leased for an hour or many days. High energy industrial accelerators are available at both locations. The Service Centers include laboratories, locked storage and other facilities.

For information, write Dept. N 11

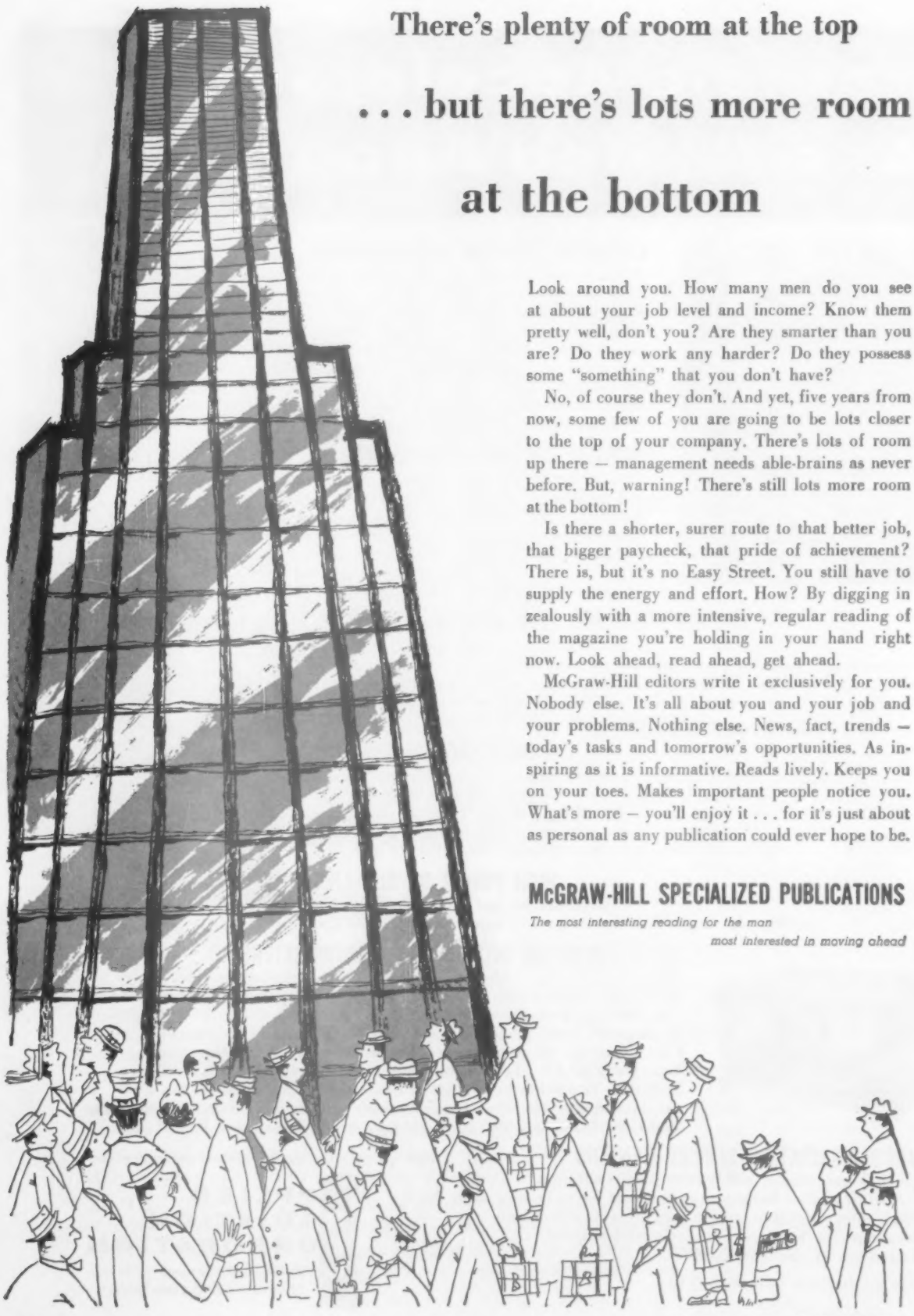
High energy radiation for research and processing

ARCO APPLIED RADIATION CORPORATION
Walnut Creek, California
YEllowstone 5-2250, Cable "ARCO"

5108

There's plenty of room at the top

. . . but there's lots more room at the bottom



Look around you. How many men do you see at about your job level and income? Know them pretty well, don't you? Are they smarter than you are? Do they work any harder? Do they possess some "something" that you don't have?

No, of course they don't. And yet, five years from now, some few of you are going to be lots closer to the top of your company. There's lots of room up there — management needs able-brains as never before. But, warning! There's still lots more room at the bottom!

Is there a shorter, surer route to that better job, that bigger paycheck, that pride of achievement? There is, but it's no Easy Street. You still have to supply the energy and effort. How? By digging in zealously with a more intensive, regular reading of the magazine you're holding in your hand right now. Look ahead, read ahead, get ahead.

McGraw-Hill editors write it exclusively for you. Nobody else. It's all about you and your job and your problems. Nothing else. News, fact, trends — today's tasks and tomorrow's opportunities. As inspiring as it is informative. Reads lively. Keeps you on your toes. Makes important people notice you. What's more — you'll enjoy it . . . for it's just about as personal as any publication could ever hope to be.

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CAT. NO.	DESCRIPTION	WEIGHT*	PRICE
B450	Single layer gown—small	4¼ lbs.	$120.00
B451	Single layer gown—medium	4½ lbs.	129.00
B452	Single layer gown—large	4¾ lbs.	138.00
B454	Single layer apron	1½ lbs.	45.00
B455	Patch on mid-body—12" high	2 lbs.	24.00
B456	Yard goods	Sq. yd. 3 lbs. Per sq. yd.	42.00
B821	Single layer coat type without sleeves	3¼ lbs.	60.00
B822	Single layer 12" square apron with ties	4 oz.	10.50
B823	Single layer 12" x 24" apron with ties	8 oz.	21.00
N587	Monitoring Service		11.00

*Approximate

ONLY 8 OZ.

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75 KV (0.5mm Al) — One layer of cloth transmits 15%; Two layers of cloth transmits 6%; Three layers of cloth transmits 4%

100 KV (1.2mm Al) — One layer of cloth transmits 25%

135 KV (2.4mm Al) — One layer of cloth transmits 45%

Refer to our catalog for radiation test data

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Lead Lined Chests and Safes • Archer Lead Glass Gowns • Lead Protective Screens • Lead Insulated Hoods

NEWEST, MOST COMPLETE LINE OF PROVED . . .

Period Amplifiers

AND

Micro-Microammeters

Stability and fast response are provided at modest cost in these Keithley instruments. Several hundred units are now in use in a wide variety of nuclear and research applications. Each model combines advanced circuitry with simplicity and reliability. Complete data will be sent promptly on request.

*** Model 420**

LOG N AND PERIOD AMPLIFIER

THE 420 is a dual monitor of power level and reactor period. It measures current from 10^{-13} to 10^{-6} ampere and positive or negative reactor period from 30 to three seconds. Zero drift is less than 0.05 decade in eight hours; response speed is adjustable over a wide range.

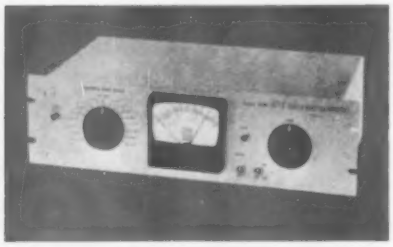
Other features include five-second recovery from overloads, self-calibration, and separate outputs from remote meters and recorders. (Contact-meter models also available.)

$950.00

linear micro-microammeters

Model 410 has 20 ranges from 10^{-12} to 10^{-3} ampere. Features include zero drift of less than 2% of full scale per 24 hours. Accuracy: 2% of full scale on 10^{-3} to 10^{-6} ranges, 4% on other ranges. Fast response; no switching transients. (Model 411 with fewer ranges and less drift also available.)

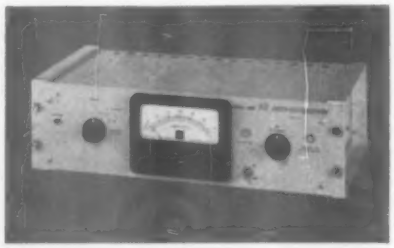
$490.00



contact-meter models

The 410-C furnishes economical control or alarm circuitry. A meter-relay with adjustable contact replaces the panel meter. 5-ampere contacts are brought out through an AN connector. (Model 411-C also available.)

$625.00



logarithmic models

The 412 Log n Amplifer has a large single scale, measuring 10^{-13} to 10^{-7} amp. with no range switching. Other features include zero drift within 0.05 decade in 24 hours, fast response and low output noise. (Model 413 with 10^{-11} to 10^{-5} ampere range also available.)

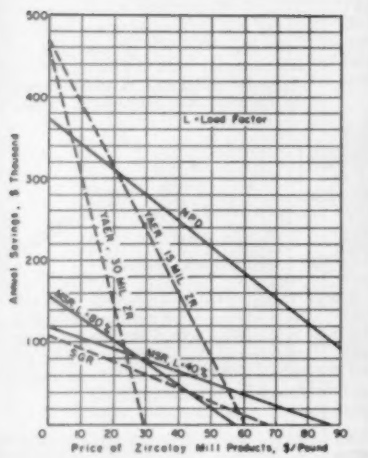
$485.00

KEITHLEY INSTRUMENTS, INC.

12415 Euclid Avenue • Cleveland 6, Ohio

ZIRCONIUM

Helps Leading Power Reactor Builders Design for Lower Costs



ANNUAL SAVINGS IN DIRECT OPERATING COSTS FROM THE SUBSTITUTION OF ZIRCALOY FOR STAINLESS STEEL IN FUEL CLADDING

The potential for low cost nuclear power is aided by the application of zirconium as cladding and structural material in atomic power reactors.

This was highlighted in a recent study on the economics of zirconium prepared for Columbia-National by Dr. Manson Benedict. Savings through the use of zirconium will be realized in a number of new atomic-electric power plants now being built. Zirconium has low neutron absorption and makes it possible to use uranium of lower enrichment, of lower critical mass, or some combination of these.

Zirconium has been proved in the highly successful Shippingport Plant and the nuclear power plants aboard the atomic submarine fleet.

Send for this Economic Study on Zirconium. It provides valuable data to help in designing power reactors for maximum fuel economy and lowest operating costs.

NEW METALS FOR INDUSTRY

Columbia-National Corporation

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✓ Check the many ways ANTON can serve your nuclear needs

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Anton's Electrically Compensated Ion Chambers and BF_3 Counter Tubes

(Enriched, normal or depleted in B^{10}) for detection of either slow or fast neutrons are widely-used in reactor control and monitoring, oil well logging and neutron survey. Available in a wide range of diameters, sensitive lengths and wall thicknesses in 2S aluminum or stainless steel.

☐

Anton End Mica Window Counters

Alpha, beta, gamma counters are halogen quenched, stainless steel. Also available with special organic as well as other rare gas fills. Window thicknesses available from 1 mg/cm². Tubes vary from subminiature to standard conventional sizes and are based with standard RMA connectors. JAN types available.

☐

Anton Thin Wall Counter Tubes

Stainless steel, halogen quenched counter tubes for beta, gamma studies are extremely sensitive and can meet all JAN-MIL specifications. They are the only commercial metal thin wall tubes available with a stainless steel 30 mg/cm² wall which will not dent or collapse. Instruments using groups of these tubes exceed in sensitivity and stability most scintillation units.

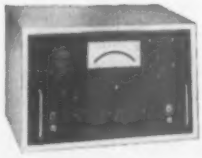
☐

Anton's Pancake Tubes

Halogen quenched, sensitive beta-gamma detectors with end mica window. These units are designed for low intensity measurement and are widely used in facilities doing low-count work. Flat pancake design offers advantage of large diameter window without large volume and high background count.

Anton high efficiency tubes are Platinized*. This process provides sensitivity beyond that of standard tubes.

*Reg. pending

☐ **229 Ratemeters** 

The most precise laboratory ratemeter available, Anton's 229 Series has 7 scales, including a single log scale from 300-50,000 cpm with accuracy of better than ±2% of meter reading above ⅓ scale. It has dual range input sensitivity and provides precise and efficient measurement of radioactivity in industry, research and medicine.

☐ **700 Survey Meter**

Portable laboratory or field survey meter (.5; 5; 50 mr/hr full scale) is built to FCDA specifications – the only CDV-700 type survey meter which can be exposed continuously to high intensity radiation without detector failure. Probe uses Anton halogen quenched, very thin wall, stainless steel counter tube. Accuracy assured from −55°C to +75°C.

☐ **44 Ratemeter**

Low-cost, accurate, dual range (0-5000; 0-50,000 cpm) . . . exclusive input design. Supplied with Anton long-lived, stainless steel, halogen quenched, thin wall (30 mg/cm²) counter tube or a wide range of other tubes. Unit features a jack for external meters, terminal board construction and oscilloscope connections.

☐ **6001 Sample Changer**

For quick, accurate measurement of low intensity radiation. Designed for use of one or two Anton pancake type, high beta sensitivity, low background counter tubes. Provides 2" lead plus 3/16" aluminum shielding in all directions, lowering the background count by a factor of from two to four. Makes possible counting geometry of nearly 100%.

☐ **High Pressure Reactor Connectors**

Anton's stainless steel, hermetically sealed reactor heater-end connector withstands 2000 PSI at temperatures of 636°F, with terminals capable of carrying a load of 16 amperes with a potential drop of less than 10 milliwatts. A wide variety of conventional and specialized connectors is available.

☐ **Medical Eye, Brain And Ingestion Probes**

These tubes are rugged, sensitive alpha, beta, gamma radiation detectors specifically designed for reliable, low count medical tracer work. They can be cold sterilized and their pulse intensity obviates the need for a preamplifier.

☐ **Air Particle Monitors**

Monitoring systems for aerosol contamination (alpha, beta, gamma) are available in a full range of moving filter paper, fixed filter paper and impact instruments. Rack mounted, cart mounted and portable instruments available.

☐ **Corona Discharge V-R Tubes (300V-30KV)**

Anton is licensed under the basic patents in this field. Valuable data available concerning this low-cost solution to high voltage low current regulation problems.

. . . and many more. SEND FOR FREE DATA CONCERNING YOUR SPECIFIC NUCLEAR INSTRUMENT, TUBE OR COMPONENT NEEDS.

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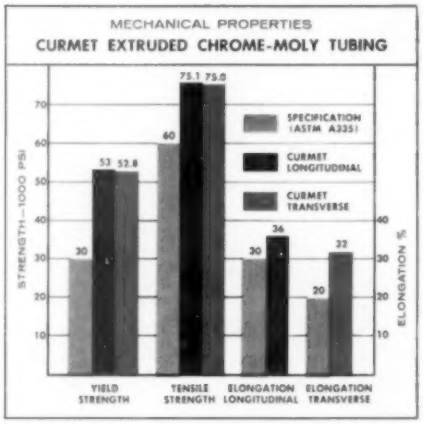
CURMET

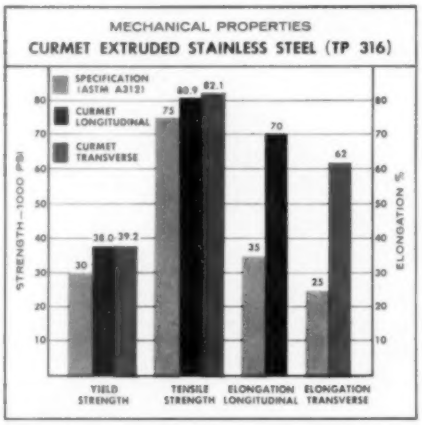
EXTRUSION • CASTING • FORGING • FABRICATION

For Equally High Strength in ALL directions

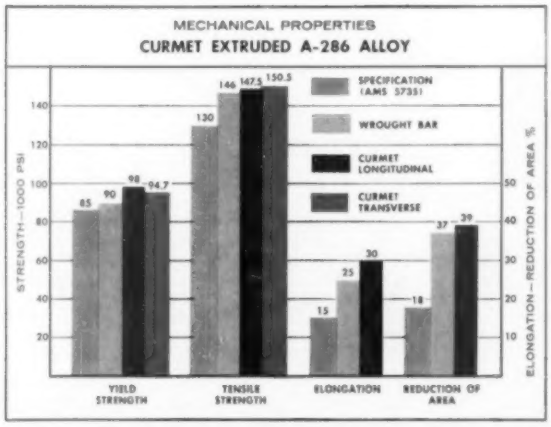
AS SHOWN BY THESE *PRODUCTION* TEST RESULTS



Made by conventional methods, tubing of this alloy would normally show a transverse strength 10 to 30 per cent below its longitudinal strength.



All properties of this CurmeT processed product prove to be not only well above specification, but *both* transverse and longitudinal strengths exceed the conventionally wrought product.



Extreme resistance of this CurmeT processed pressure tubing to radial stresses is shown by transverse strengths actually higher than the longitudinal. Elongation is 100 per cent in excess of requirement.

Where "hoop strength" or resistance to internal pressures is required in large tubing or pressure vessels, the non-directional properties of CURMET processed ferrous alloys offer a significant contribution. No longer need the designer compensate for the "one-way" strength of conventionally processed tubular products by specifying additional thickness of costly alloys.

The advanced CURMET methods of extrusion, casting, forging and machining developed by the Metals Processing Division have resulted in improvement of physical properties in a wide variety of alloys.

FOR FULL INFORMATION, WRITE TO:

METALS PROCESSING DIVISION
760 Northland Avenue

CURTISS-WRIGHT CORPORATION
Buffalo 15, New York

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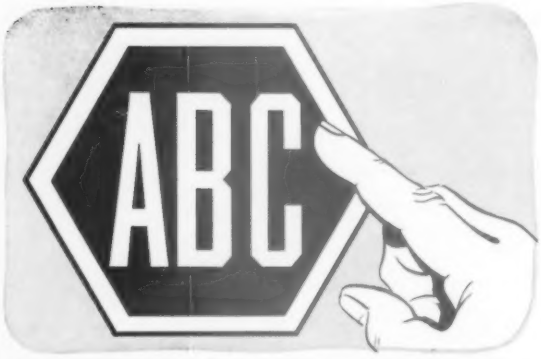
. . . *in the magazine publishing business, it's*

The Audit Bureau of Circulations (ABC) is a cooperative organization that sets standards of good business conduct for its publisher members. Once each year ABC auditors carefully scrutinize the entire circulation structure and operation of every member magazine. In a very real sense, therefore, they are "minding the store" — making sure that no false or misleading claims are made regarding the size or composition of a magazine's audience.



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McGRAW-HILL PUBLISHING COMPANY, INC.

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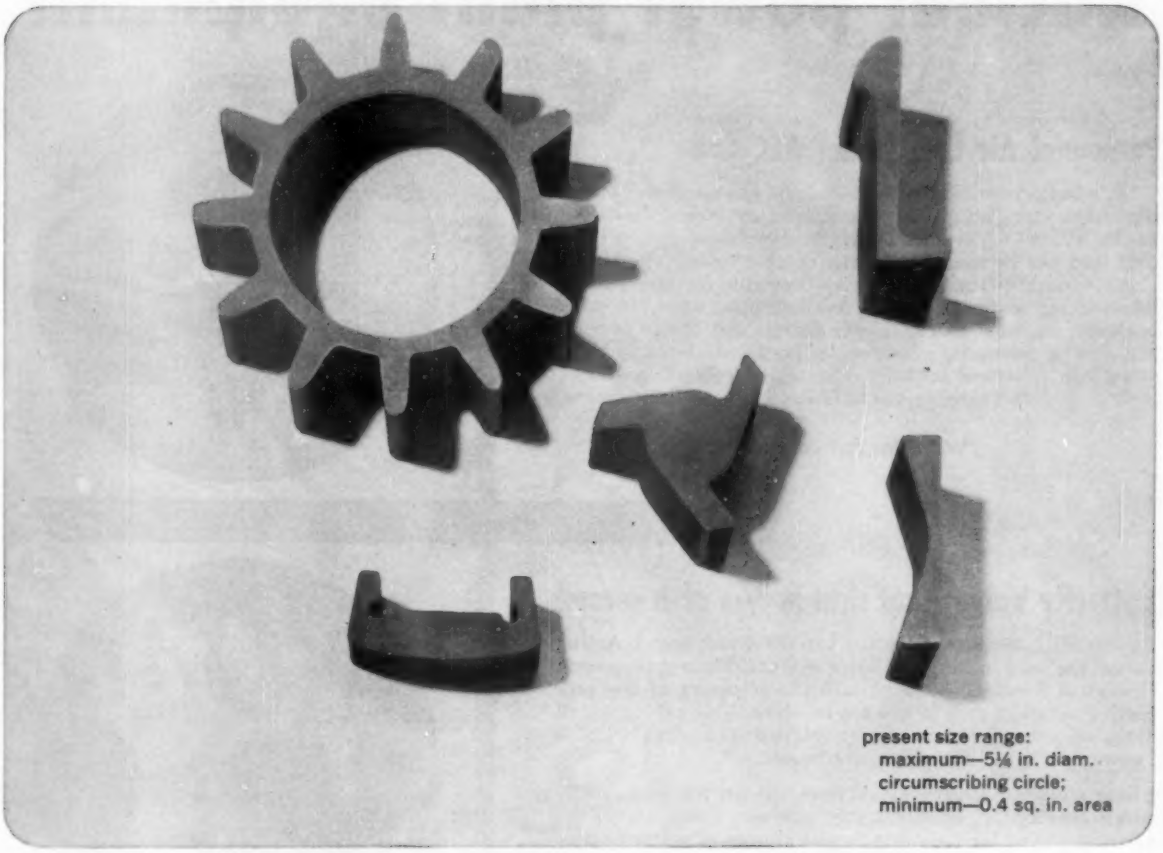
Experience**—the added alloy in **A-L Stainless, Electrical and Tool Steels



present size range:
maximum—5¼ in. diam. circumscribing circle;
minimum—0.4 sq. in. area

- 316 Stainless
- 304 Stainless
- Tool Steel Atlas 93
- SAE 4130
- 410 Stainless

Why hog out intricate shapes like these? Let A-L extrude them in any steel

If you're hogging out sections, paying for special mill rolls on small orders, or waiting for minimum rolling mill tonnages, Allegheny Ludlum Steel Extrusions are your answer. They will save you scrap loss, slash your machining costs, hold down your inventory requirements and cut delivery time.

Extruded shapes save money on expensive materials and on costly machining. Non-ferrous applications in the last decade have proven it. Now even greater savings are possible with tough, strong metals in Allegheny Ludlum Steel Extrusions.

Intricate extruded shapes in all stainless grades, tool steels, carbon steels, electrical steels, high temperature alloys, even zirconium and nickel alloys are now in production at Allegheny Ludlum, cutting costs in many different industries.

Costs and minimum order quantities are surprisingly low. Charge for die design is under $200. Orders taken for as little as 40 pounds.

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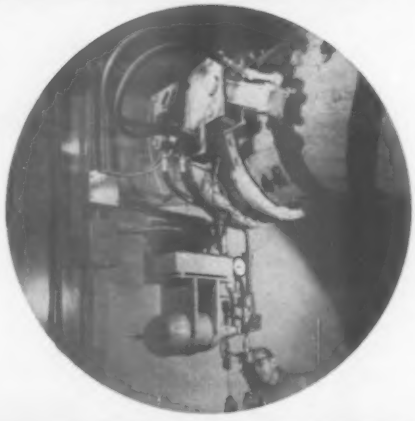

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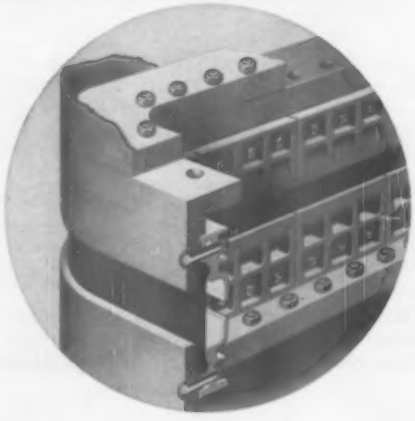

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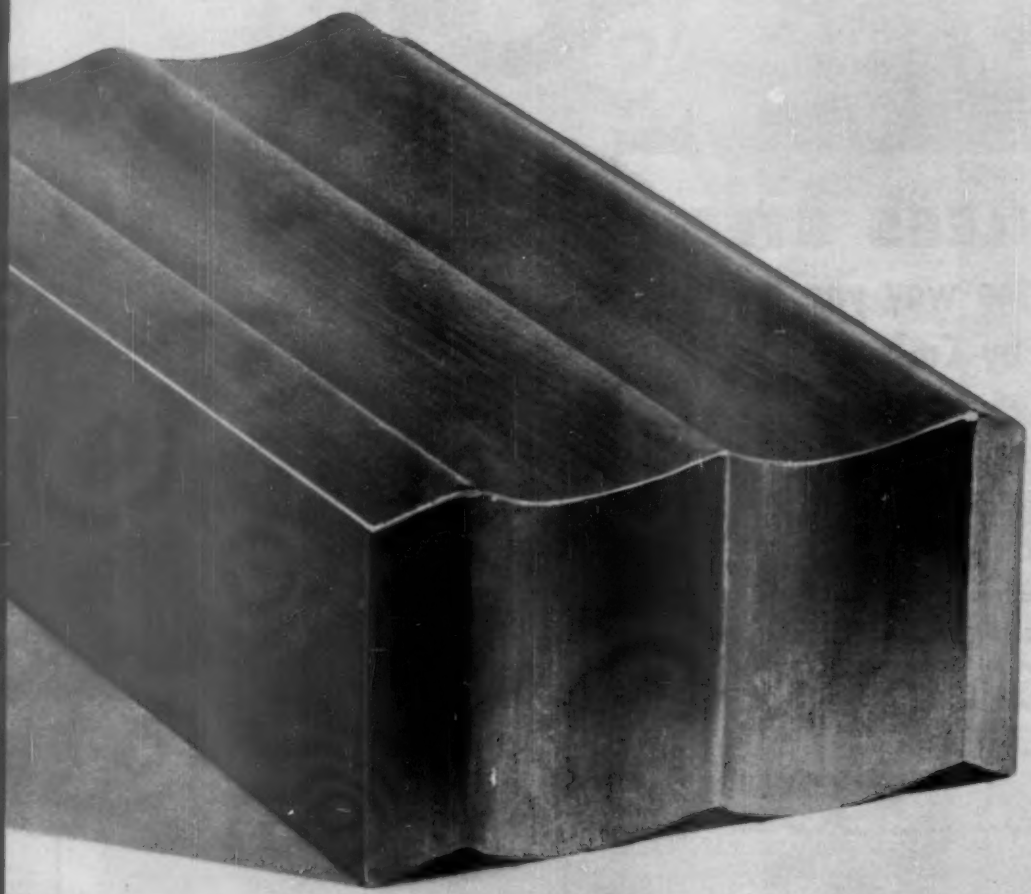

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No matter what you need in ultrasonic cleaning equipment, you'll find Narda's complete line of production-size units have the quality, power, performance, capacity and appearance of cleaners selling up to three times their price! Write for more details now and we'll include a free questionnaire to help determine the precise model you need. Address: Dept. N-25.

Generator G-202 **Transducerized Tank NT-202**
35 watts **Capacity: ⅛ gallon**

An amazingly efficient, yet inexpensive, ultrasonic cleaner. Duty cycle timer permits operator to turn the unit on, set it, and leave; the SonBlaster will turn off automatically at the end of the cycle. Four choices of timers—from 0-15 min. to 0-120 min. Also available without timer at slightly lower cost (G-201).

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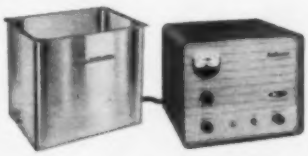
Generator G-601 **Transducerized Tank NT-602**
60 watts **Capacity: 1 gallon**

A more powerful production-type unit, with a special circuit and selector switch permitting operator to alternate between two tanks, when items being cleaned require different solutions or a two-step process.

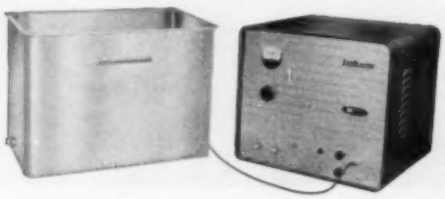
$350



Transducerized Tank NT-1505 **Generator G-1501**
Capacity: 5 gallons **200 watts**

The lowest price in the industry for a tank of this capacity and activity. Generator also will operate 2, 3 or 4 submersible transducers at one time, with just a turn of the load selector switch on the front panel.

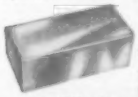
$695



Transducerized Tank NT-5001 **Generator G-5001**
Capacity: 10 gallons **500 watts**

Generator features standby switch for longer life and load selector switch on the front panel to operate up to 8 submersible transducers or 8 NT-602 or 2 NT-1505 transducerized tanks at one time. Larger tanks available on special order.

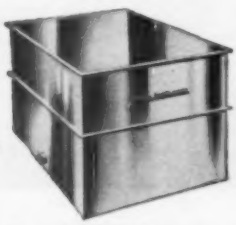
$1325



Submersible Transducer NT-605

Heli arc welded stainless case, hermetically sealed for safe, leak-proof immersion. Radiating face: 27 sq. in. Effective plane of radiation: 40-50 sq. in. (approximately 10" x 5"). Effective cavitation of volumes up to 1200 cu. in. at 24 in. tank height (5 gal.) and 2400 cu. in. at 48 in. tank height (10 gal.). Bulkhead electrical fitting on back allows all wiring connections to be made on outside of tank. For use in any arrangement or location in any shape tank you desire to use. Also available—model NT-604, identical with NT-605, except for pipe thread instead of bulkhead fitting, permitting electrical connections inside of tank.

$130



Transducerized Tank
NT-25001
Capacity: 75 gallons

Powerful unit drives the largest mass-produced industrial-size transducerized ultrasonic cleaning tank made! Also energizes up to 40 Narda 60-watt submersible transducers (NT-604 or -605). Capable of energizing tanks measuring up to 150 square feet of area by 2' or 3' high.

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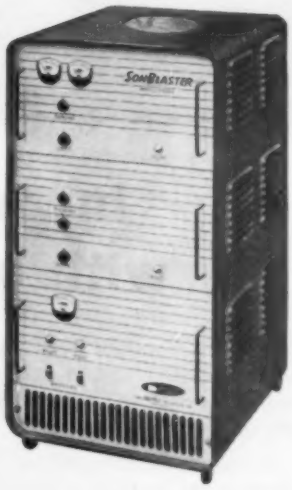
Generator G-25001
2500 watts



Consult with Narda for all your ultrasonic requirements. The SonBlaster catalog line of ultrasonic cleaning equipment ranges from 35 watts to 2.5 KW, and includes transducerized tanks as well as immersible transducers which can be adapted to any size or shape tank you may now be using. If ultrasonics can be applied to help improve your process, Narda will recommend the finest, most dependable equipment available—and at the lowest price in the industry!

"For custom-designed cleaning systems, write to our Industrial Process Division; for information on Chemical processing applications, write to our Chemical and Physical Process Division; both at the address below"

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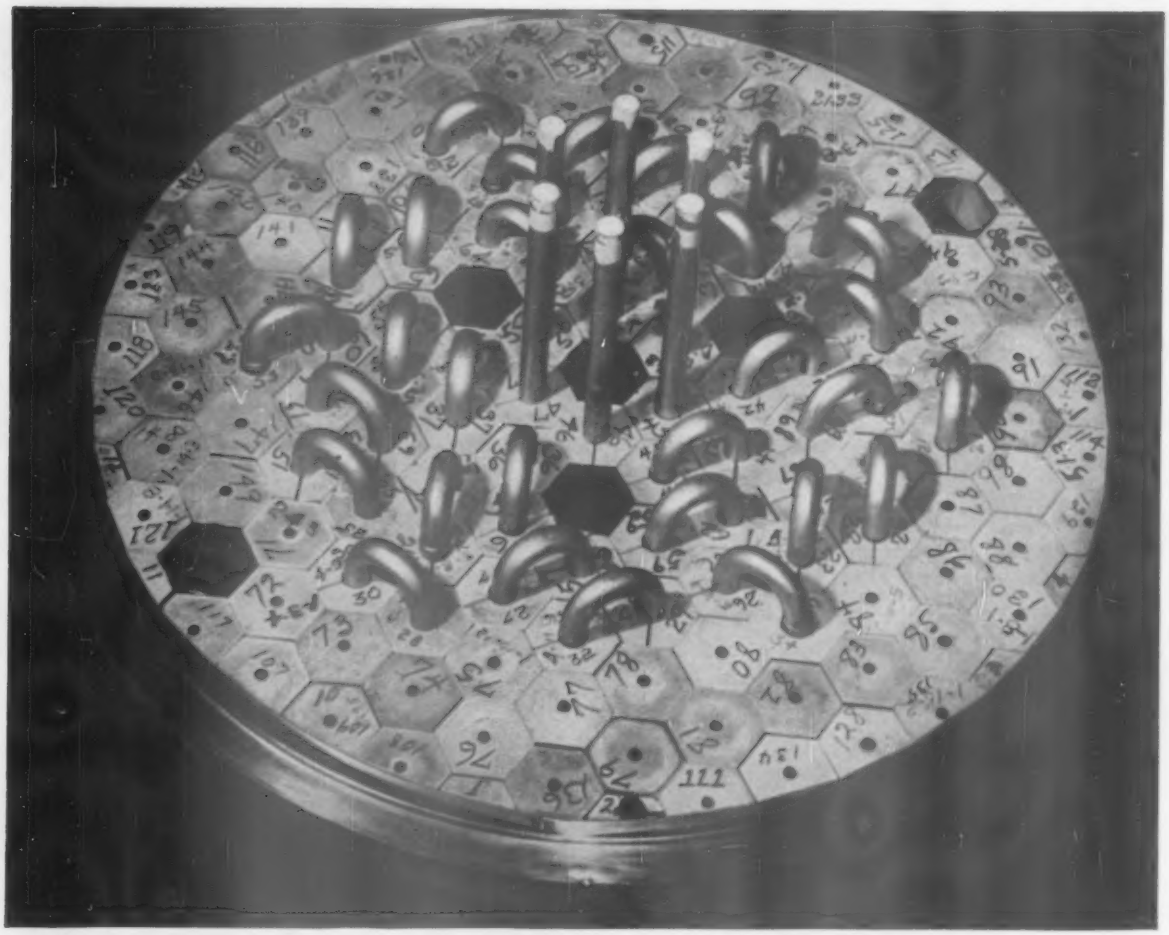

Inconel test reactor operates with molten fluorides at 1500°F

The Aircraft reactor experiment, reported in ORNL 57-6-69, showed that molten fluoride salt reactors develop promising thermal efficiency.

Other advantages include modest pressures, thorium solubility, no water decomposition problem, small absorption cross sections, good heat transfer properties.

In this system, Inconel* nickel chromium alloy was used throughout (reactor, lines, tanks, and exchangers) to circulate molten fluorides containing dissolved uranium fluoride fuel at temperatures to 1500°F, or more. It was also used for the 2-in pressure shell and for strip heaters clamped around shell (left photo).

Joints and closures were Heliarc welded and inspected by dye penetrant and gamma graphing

The ORNL report states: ". . . our considerable experience with these systems strongly suggests that the corrosion problem is a tractable one."

Do you have a corrosion problem involving fluorine or fluorine compounds? Write to our Development and Research Division for assistance.

New booklet on fluorine handling

Inco's new 24-page booklet "Handling Fluorine and Fluorine Compounds" gives corrosion data on fluorine and hydrofluoric acid, and summarizes case history data on solution of corrosion problems in many installations. Write for your free copy.

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NUCLEONICS

ATOMIC POWER
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NOVEMBER, 1958

SENN, An Industrial Milestone

THE international nuclear power industry truly came of age with the recent announcement of the selection of the International General Electric Co.–Ebasco Services team to build the 150-Mw(e) station for Italy's SENN (NU, Oct. '58, 25; and this issue, p. 20). A number of factors make this project an historic one:

1. The job was bid on a *commercial* basis. It's a fixed-price venture. The companies went into it to make a profit. Despite this, most of them stuck their necks out and indicated a willingness to take substantial risks.

2. The risks are to be borne by industry alone. Euratom support will apparently not be involved in this project.

3. Reactors of three different countries were evaluated by a World Bank technical panel. An American plant won, enhancing the prestige of U. S. offerings over those of the U. K.

4. World Bank financing increases the stature of the project.

5. This plant may well produce the world's first truly competitive nuclear power.

6. A 10,000-Mwd/ton fuel irradiation is the warranty given by I.G.E. This is one of the best indicators of the arrival of the era of commercial nuclear power.

Our hats go off to SENN for its pioneering venture; to the World Bank for helping to create a commercial environment in this its first venture in nuclear power; and to I.G.E.–Ebasco for winning the contract.

IAEA: Will it Survive?

THE International Atomic Energy Agency will die or will be relegated to a life of mediocrity unless it develops a vigorous program—soon. Otherwise other means will be found to serve the functions of the Agency—in fact, some of its functions are already being pre-empted.

The problems the Agency has are many: the basic and ever-present East-West conflict; atomic nationalism (as against internationalism) shown by many member nations; the usefulness to the major powers of atomic energy as a bilateral political tool; and the conflict between the atomic "haves" and "have nots" on what they want from the Agency.

These problems have resulted in the Agency being more worried about what it should *not* do rather than what it should do. Confidence and strength can never be built around negativism. Rather the Agency needs to be bold and imaginative to be able to attract world-wide scientific and political support.

It needs to have a program of its own, one that will attract competent scientists. It should have its own laboratories, its own irradiation facilities. One specific program it might have is a research effort on controlled thermonuclear power. This is a virgin field to which many countries, large and small, could contribute good scientists.

It also needs to step very boldly into the fields of radiation and reactor safety, where international guidelines must be developed.

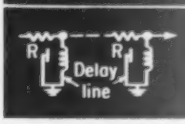
By establishing itself in these areas, the Agency will become a going concern that will be accepted and supported by the nuclear community. It will then be in a much stronger position to take on one of its most important, long range functions—international control of fissionable material.

A Model Accident Report

THE Union Carbide Nuclear Company and the Atomic Energy Commission are to be complimented on the excellent investigative report they have issued on the accidental radiation excursion at Oak Ridge in June in which eight men were overexposed (see p. 138, this issue). The report was issued promptly (as were the original announcements on the accident) and is amazingly thorough. It demonstrates a real understanding of the importance to public acceptance of atomic energy of not withholding information on nuclear accidents.

We recommend to our readers that they get a copy of this report (Y-1234, available at $2.75 from the Office of Technical Services in Washington). It serves not only as a model accident report but also contains considerable interesting technical data on dosimetry and the characteristics of a critical system of the type involved.

Jerome D. Luntz

CLIPPING SYSTEM	PULSE DURATION	BASE LINE POSITION	PILEUP OVERLOADING	LOW FREQUENCY NOISE	RELATIVE MID-BAND NOISE
	Medium	Depends on counting rate	Difficult to make both good		1
	Long	Independent of counting rate	Low	Low	1.3
	Short	Depends on counting rate	Difficult to make both good		1
	Medium	Independent of counting rate (even when overloaded)	Low	Low	2

These four passive-element circuits are commonly used to remodel radiation-detector pulses for pulse-height analyzers. Each is seen to have its advantages and disadvantages in . . .

Shaping Pulses for

By ROBERT L. CHASE, *Brookhaven National Laboratory, Upton, New York*

RADIATION DETECTORS, such as scintillation counters, proportional counters and pulse ionization chambers, have as their output electrical charge impulses. Since the pulse size often gives information about the particle, these signals are usually fed to a pulse-height analyzer for sorting and tallying. The circuit that connects the detector with the pulse-height analyzer has the job of amplifying and shaping the original detector pulse to meet the requirements of the pulse-height analyzer. There is of course no limit to the number of possible amplifier pulse-shaping circuits; however four general approaches to pulse shaping have found wide application in the nuclear field. The table identifies and compares these four pulse-shaping systems with respect to pulse duration, base-line stability, pile-up over-loading, low-frequency noise and midband noise. Figures 1–3 show the pulse shapes obtained for the various arrangements. Each method is seen to have its advantages and disadvantages.

Circuit Requirements

Ordinarily the signals produced by radiation detectors fall in the broad range between 10^{-15} and 10^{-10} coulombs per pulse. The charge collection time (signal rise time) usually lies in the range of a few millimicroseconds to several microseconds. Most present-day pulse-height analyzers measure pulses in the 0–100-volt range. Their requirements with respect to pulse duration vary from instrument to instrument but pulse lengths of the order of one to several μsec are most common.

To maximize the signal amplitude at the amplifier input, and therefore the signal-to-noise ratio, it is customary to integrate the signal charge on the smallest practical amount of capacitance, usually the strays associated with the counter itself and the amplifier input. The associated leak or discharging resistance is made sufficiently large so that the resultant input time constant is long compared with the signal rise time. In this way the signal is allowed to approach a peak amplitude determined only by the signal charge and the integrating capacitance. The signal then has the general appearance of a step function (Fig. 1a) except that the rise time is greater than zero.

If the pulse-height analyzer is to measure individual signals independent of previous ones, the signals must be permitted to decay in a reasonable time. "Reasonable time" has various interpretations depending on the application, but in general the decay time must be short compared with the average interval between pulses if the distortion due to pile-up is to be small. At the same time the signal duration must be longer than the rise time if the peak height is to be representative of the total collected charge.

There are two important reasons why the peak signal height should represent as nearly as possible the total collected signal charge. First, the accuracy with which the signal height represents the energy dissipated in the counter is limited by a number of statistical uncertainties. The larger the statistical sample, the smaller is the uncertainty compared to the signal size. The total signal charge is the largest statistical sample available and yields the most accurate energy measurement, and therefore the best resolution in a nuclear spectrometer. Secondly, the signal rise time with some detectors (notably proportional counters and pulse ionization chambers) varies from pulse to pulse. This results from the fact

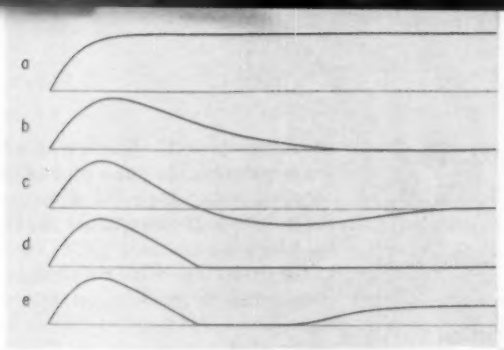


FIG. 1. (a) Integrated input signal (b) after single-*RC* differentiation and (c) after double-*RC* differentiation. (d) Double-*RC*-differentiated signal with under-shoot removed by properly located d-c restoring diode and (e) by improperly located d-c restoring diode

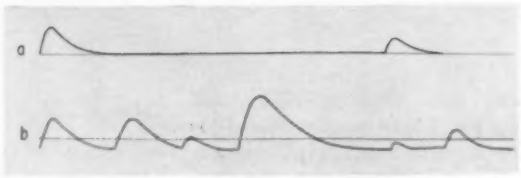


FIG. 2. Single-*RC*-differentiated signals (a) at low counting rates and (b) at high counting rates

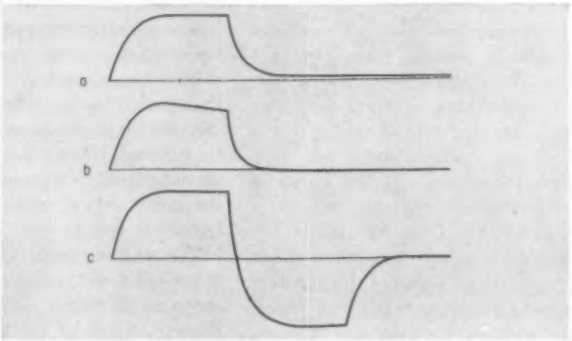


FIG. 3. Single-delay-line-differentiated signal (a) showing "rear porch" due to delay-line attenuation and (b) with rear porch removed by *RC* differentiation. (c) Double-delay-line-differentiated signal

Nuclear Spectrometry

that the charge collection time depends on the location and orientation of the incident particle track in the detector. If the signal duration is too short to represent the total signal charge the amplifier output pulse height will represent an uncertain fraction of the energy dissipated in the counter, and the system resolution will be poor. Therefore, in all cases where good resolution is required the signal duration is at least several times the rise time.

Single-*RC* Differentiation

Single *RC* differentiation is the simplest pulse shaping system in current use (*1*, *2*). The signal is passed through a single high-pass resistance-capacitance coupling circuit (differentiating circuit). (See Fig. 4.) The differentiating time constant is chosen to produce a moderately short pulse consistent with the requirement that the pulse duration be long compared with the rise time. Time constants of 0.2–10 μsec are most common. All of the other coupling time constants in the amplifier are made very long compared with the short differentiating time constant so that the resultant pulse (Fig. 1b) is unipolar. The choice of the location of the single short differentiating (clipping) time constant is influenced by two more or less conflicting requirements. Placing the clip at or near the amplifier output has the advantage that the low frequency noise (hum, microphonics, flicker noise) generated in the early stages is attenuated. However if the signals are allowed to pile up to a level approaching the available dynamic signal range anywhere in the amplifier preceding the clip, then statistical fluctuations in the counting rate can drive the amplifier out of its linear range (*1*, *3*). Signals appearing at the output well below amplifier-saturation amplitude can be considerably distorted if they occur in a statistical burst and the clip is too near the output. In a practical amplifier the location of the clipping circuit represents a compromise between the requirements of low noise and low pileup.

In a high-gain amplifier designed to handle small input signals from pulse ionization chambers the clipping time constant is usually placed near the middle of the amplifier. In a lower gain amplifier designed for scintillation counters the clip may be near the input. In some cases the differentiation is accomplished by using a suitably small counter anode resistor or amplifier-input grid-leak resistor. The clipping time constant is then determined by the product of the effective input-circuit resistance (anode resistor and grid-leak resistor in parallel) and the total input capacitance (counter plus amplifier). This arrangement has the advantage that the input resistance can have a conveniently low value; also it permits the use of input circuitry with a small dynamic-amplitude range without danger of pileup overloading. However it has a noise disadvantage which becomes quite important in the case of high-gain amplifiers, and makes its use impractical with high-resolution pulse ionization chambers. In the frequency range in which the amplifier-input capacitance corresponds to an impedance small compared to the effective input resistance, the Johnson noise voltage is found to vary inversely as the square root of the input resistance (*4*). For this reason the input resistance in ionization chamber amplifiers is made very large, often hundreds of megohms. In the case of scintillation-counter amplifiers, however, the Johnson noise, even with the worst

possible value of input resistor, is usually found to be small compared to the statistical fluctuations in the signal.

Single *RC* differentiation has two important disadvantages. The first, already considered, is that the clip can be in one place only and cannot simultaneously satisfy the requirements of minimum low-frequency noise and low-pileup distortion. The second disadvantage results from the fact that an *RC*-coupled amplifier cannot, strictly speaking, deliver unipolar pulses. Another way of saying this is that direct current does not flow through capacitors. If the signal is coupled through a capacitor to a linear load, the time integral of the positive parts of a long string of pulses must equal the integral of the negative parts. At low-duty ratios in a single-clipped amplifier each signal is balanced by a small but very long undershoot. Because the undershoot is small it is difficult to distinguish between the undershoot level and the average reference level. The signal height is then easily measured with respect to an apparently stable base-line reference (Fig. 2a). However at high counting rates the undershoot level departs appreciably from the average output level to keep the positive and negative integrals equal (Fig. 2b). If the signal is measured with respect to an average reference base line, it is recorded as being smaller than at low counting rates. This variation in apparent signal height with counting rate is the second disadvantage of single-clipping.

It should be mentioned that this second disadvantage can be at least partly ameliorated by using diode d-c restoration between the amplifier and pulse-height analyzer. However this is not often used because the diode establishes a base line at the peak negative noise level effectively doubling the amplifier noise (including hum and microphonics). In addition, the diode non-linearity at small signal levels presents a non-linear load to the amplifier and may cause increased amplifier non-linearity in the small-signal range.

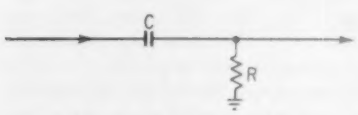


FIG. 4. *RC* differentiating circuit

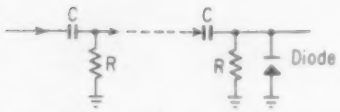


FIG. 5. *RC* circuit with restoring diode

Double-*RC* Differentiation

The disadvantages of single-*RC* differentiation can be overcome by employing two short time constants rather than one in the amplifier circuit. One clip can be placed at or near the input to prevent pileup overloading. The second clip can be placed well along in the amplifier to eliminate hum and low-frequency noise.

The output signal has the general shape indicated in Fig. 1c. The exact shape is of course dependent on the relative values of the two short time constants and on their relation to the signal rise time. However in all cases the signal is bipolar and if the amplifier is linear the area included under the positive part is exactly equal to the area under the negative part. For this reason the output-signal location with respect to the average reference base line does not vary with counting rate as it does with single-*RC* clipping.

However double-*RC* differentiating also has some disadvantages. If one compares single- and double-clipped waveforms produced by comparable time constants one finds that the second derivative of the voltage with respect to time in the neighborhood of the peak is greater with double clipping. That is, with double clipping the signal is more pointed. Because sharply pointed signals adversely affect the linearity of many amplifiers and pulse-height analyzers it may be necessary to use longer *RC* time constants with double clipping than with single clipping. In addition, even with equal time constants the presence of the undershoot makes the effective duration of a double-clipped signal greater than that of a single-clipped signal. To prevent pulses from being distorted by the tails of their neighbors a lower counting-rate limit may have to be imposed with double clipping. This effect is somewhat offset by the fact that base-line displacement is now unimportant, so that in a practical case the upper counting-rate limit at which the spectral distortion is not excessive may be very similar.

It is possible to achieve some of the advantages of double-*RC* clipping without lengthening the pulse beyond that obtained with single-*RC* clipping if the resistor in the second clip is paralleled by a d-c restoring diode (Fig. 5). In the circuit illustrated the diode is an open circuit for positive signals and a short circuit for negative ones. Any charge that accumulates on the coupling capacitor due to current flow in the clipping resistor is quickly removed by the diode as the input signal falls. The diode removes the undershoot so that it is not necessary to wait for it to decay. When this technique is employed the second clip is usually at the amplifier output, and a direct coupling between the second clip and the pulse-height analyzer is customarily used to keep the base-line location independent of counting rate. Although the signal appears to end abruptly (Fig. 1d) it lasts (as far as signal-pileup distortion is concerned) until diode conduction becomes negligible. This occurs when the corresponding single-clipped signal has decayed to a negligible value. Of course, as with single clipping, the d-c restoring diode restores the base line to the peak negative noise level rather than the average signal level. When employing d-c restoration with double clipping it is essential that the diode be in parallel with the clipping resistor immediately following the second clipping capacitor. If d-c restoration is attempted at a later point in the circuit the diode will restore the base line to the peak-signal undershoot level and spurious pulses (Fig. 1e) will be generated.

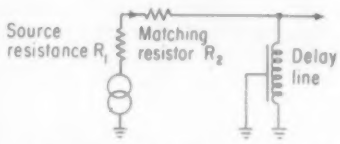


FIG. 6. Delay-line differentiating circuit. R_2 is chosen so that $R_1 + R_2$ is equal to the delay-line impedance

Double-*RC* differentiation has a slight noise disadvantage. In the amplifier mid-band frequency range the noise is found to be proportional to the gain expressed in terms of the peak-to-peak output signal. However none of the pulse-height analyzers in common use measures the peak-to-peak signal height. Since in a typical case the undershoot with double-*RC*

clipping is about 30% of the peak height, one may find the effective signal-to-noise ratio with double clipping about 30% poorer than with single clipping. This disadvantage however is often offset by the reduction in hum, microphonics, grid current and flicker noise resulting from a more favorable location of the low-frequency cutoff.

Delay-Line Differentiation

A delay line can be used in at least two different ways to convert a step function into a square wave of controlled duration. One way is to impress the signal on a short-circuited delay line from a source whose impedance matches the characteristic impedance of the delay line (Fig. 6). After a time interval equal to twice the propagation time of the line, the signal returns from the short-circuited end to cancel the signal at the input end. The accuracy of the cancellation depends upon the accuracy of the impedance match and the phase distortion and attenuation in the delay line. With care in the choice of terminating network to compensate for the inevitable lumped capacitance at the driving end, and to at least partially compensate for the phase distortion, various people have successfully reduced the residual ringing signals observed with commercially available helically wound delay cables to a few percent of the signal size. The pedestal or "rear porch" that results from attenuation in the line (see Fig. 3a) cannot be compensated for by the termination network. The height of the pedestal depends upon the resistance of the line, and results from the fact that the reflected signal is attenuated by two trips through the line and is somewhat smaller than the input signal. The pedestal can be effectively eliminated by passing the signal through an appropriate *RC* differentiating circuit. The resultant signal (Fig. 3b) has no rear porch, but the signal top is no longer perfectly flat.

An alternative technique for converting a step function into a square wave involves the use of a delay line terminated in its characteristic impedance at the receiving end and preferably but not necessarily at the sending end. The delayed signal is subtracted from the input signal in a difference amplifier. The input signal may be slightly attenuated at the difference-amplifier input to compensate for the attenuation of the delayed signal in the delay line (Fig. 7). In this way the rear porch is eliminated without resorting to additional differentiation and the output signal retains its flat top. This arrangement has the further advantage that the delay line may be terminated at both ends so that much poorer matches can be tolerated without producing excessive ringing. Of course this technique involves the use of an additional active element, a difference amplifier, which must have good common-mode rejection over a reasonable dynamic range if the output signal is to have no rear porch.

The principal argument for using single-delay-line clipping over single-

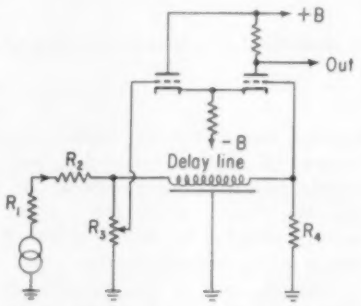


FIG. 7. Alternative delay-line differentiating circuit. The delay line is terminated at the receiving end by R_4 and at the sending end by the parallel combination of $(R_1 + R_2)$ and R_3. The tap on R_3 is adjusted to compensate for attenuation in the line

RC clipping is that for a given degree of flatness in the neighborhood of the pulse peak the delay-line-clipped signal may be considerably shorter. Where the pulse-height analyzer used requires a flat-topped pulse for good linearity, delay-line clipping is to be preferred unless the counting rates are low, in which case signals clipped with relatively long *RC* time constants can be used.

The arguments against the use of delay-line clipping are based on the extra complexity of the circuitry and the small residual ringing signals due to the ever-present delay-line imperfections. In other respects single-delay-line clipping and single-*RC* clipping give similar results. In both cases the location of the base line is counting-rate dependent, and it is difficult to control pileup overloading and low-frequency noise simultaneously.

Double Delay Lines

Applying delay-line clipping at two places in the amplifier results in a bipolar signal (see Fig. 3c) in which the positive and negative areas are equal (*3*, *5*). The base-line location is independent of counting rate, and pileup overloading and low-frequency noise can both be minimized.

Double-delay-line clipping has an additional advantage not realized with double-*RC* clipping. With double-*RC* clipping the equality of positive and negative areas only applies to signals within the linear range of the amplifier. With signals large enough to drive the amplifier to saturation on the main signal or its undershoot, or both, the two areas will in general be different, and the base line location will no longer be independent of counting rate.* With double-delay-line clipping this difficulty can be avoided by suitable design of the output stage. If the output stage is designed to limit at equal positive and negative excursions then the areas are equal even in the overloaded condition.

Like double-*RC* clipping, double-delay-line clipping has some disadvantages. For a given degree of signal flatness the double-delay-line-clipped signal is twice as long as the corresponding single-clipped signal. In addition, because the peak-to-peak signal is twice the useful signal size, the double-clipped-signal-to-mid-band-noise ratio is half that of the single-clipped signal and about 65% of that obtained with double-*RC* clipping. Furthermore, to achieve the advantages of signal symmetry the amplifier-output stage must be designed to be linear over twice the voltage range required with single clipping.

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* Other difficulties often result from the presence of large overloading signals in linear amplifiers. Most important of these is the long period paralysis that results from charging coupling capacitors with grid current in over-driven stages. Cf. (*4*) and (*6*).

Shielding the Enrico Fermi Fast Breeder Reactor

Shielding a fast reactor is tougher than shielding a thermal reactor; not only is the neutron spectrum harder, but neutron leakage is greater. Here's how those problems were solved for the Enrico Fermi Reactor

By H. E. HUNGERFORD and R. F. MANTEY,* *Atomic Power Development Associates, Inc., Detroit, Michigan*

MANY OF THE SHIELDING PROBLEMS of a fast breeder reactor are, by necessity, quite different from those of a thermal reactor. The main reason for this is that, in a fast reactor, the chain reaction proceeds at high neutron energies (0.1–0.5 Mev). Also the core is kept as small as possible to keep fuel inventory and fixed charges low. In such a reactor, the leakage of neutrons from the core is much greater than it is in a thermal reactor (because the probability of fission and nonfission capture by the core material is low compared with a thermal reactor). This leakage is desirable from the standpoint of breeding in the uranium blanket that surrounds the core, but it aggravates the shielding problem.

Figure 1 shows the neutron energy spectrum in the core and at the outer edge of the blanket region of the Enrico Fermi reactor (*1*). It can be seen that, of the neutrons escaping the core and blanket, there are almost no very low-energy neutrons and only a relatively few very high-energy neutrons. The great bulk of them have energies in the range 10 kev to 0.5 Mev. This is an energy region difficult to shield against.

Neutron shielding of a fast reactor can be accomplished by using a stainless-steel thermal shield inside the vessel to protect it against radiation damage caused by the high-energy component of the escape flux, and using a good moderating material outside the vessel, where there is no penalty attached to its use, together with a strong neutron absorber.

Graphite, with a few percent by weight of boron, satisfied both of the latter requirements. It would be very desirable, of course, to use water as the shield material because it is cheapest and most readily available, but the water might leak into the core and/or into the sodium coolant, creating hazardous conditions.

Gamma-ray shielding is accomplished, in any shield design, by the use of lead, steel or other dense materials. In a fast breeder, the uranium blanket serves to shield out most of the core gammas, and a steel thermal shield absorbs a large part of the capture-gamma radiation produced in the blanket and in itself. In fact, it turns out that the escape flux of gammas from the primary shield is not of overriding importance because of the intense gamma activity of the primary coolant outside the shield.

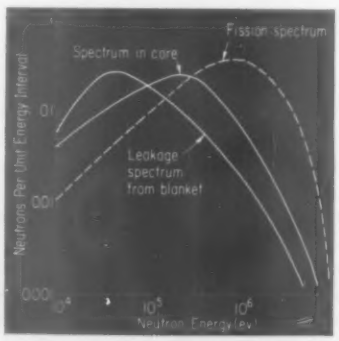

FIG. 1. Neutron spectra of Enrico Fermi reactor show large number of 10-kev–0.5-Mev neutrons that are difficult to shield against

Shield Design

The shield of the Enrico Fermi plant has been designed, for the most part, from common materials whose durability over the 20-yr expected life of the plant is well known and unquestioned and whose cost is low. These are: graphite, steel and concrete. Costs have been kept down by attempting to design realistically—not too conservatively, yet following good shielding practices. Where common or low-cost materials did not fill the need, we have not hesitated to use less well-known, more costly, materials. Table 1 gives an estimate of unit costs of materials that are being used in the Enrico Fermi reactor shield system.

The over-all shield system is shown in elevation in Fig. 2 and in plan view in Fig. 3. Briefly, it consists of three major parts: (a) a highly efficient neutron and gamma-ray shield located directly outside the core and contained within a vessel known as the primary-shield tank, (b) a neutron secondary shield of concrete that divides the lower portion of the reactor building

* On leave of absence from Philadelphia Electric Co.

into an inner reactor compartment and an outer heat-exchanger compartment and (c) a biological shield that completely surrounds the lower portion of the reactor building.

Primary Shield

The primary shield shown diagrammatically in Fig. 4 consists of a 12-in. stainless-steel thermal shield inside the reactor vessel, a 50-in. (or more) graphite-and-carbon shield in the space between the reactor vessel and the primary shield tank and the rotating-plug shield in the top of the vessel. The purpose of the primary shield is to reduce the high-intensity neutron and gamma radiation from the core to such a level that less expensive materials can be used elsewhere.

Thermal shield. The thermal shield will be of type-304 stainless steel. It acts as a reflector, returning neutrons to the blanket, at once increasing the breeding within the blanket and reducing the leakage out of the vessel. It also acts as a gamma-ray absorber, protecting the vessel and other parts of the shield against heating by the intense core and blanket gammas. But, most important, it also protects the vessel walls against radiation damage by high-energy neutrons. The total damaging integrated flux (nvt) of neutrons incident on the vessel at any point over the lifetime of the plant will be less than $10^{23}/cm^2$. (Recent data from examination of EBR-1 core indicates that steel can undergo integrated fluxes of the order of 6×10^{22} nvt at high temperatures without harmful radiation effects.) In addition, this shield protects the vessel against thermal shocks caused by thermal transients in the sodium coolant. Laminations (see Fig. 4) allow coolant to pass through the shield to remove the heat generated by radiation absorption.

Stainless steel was chosen instead of carbon steel for the thermal shield for two reasons: stainless steel is compatible with high-purity sodium while carbon steel is not, and carbon steel has low cross-section values at certain energies, which allows neutrons of these energies to stream through the material almost without attenuation. (This phenomenon is often called energy streaming.) The nickel in stainless steel eliminates this defect.

It is of interest to note just how much the 12-in. stainless-steel shield attenuates neutrons of various energies

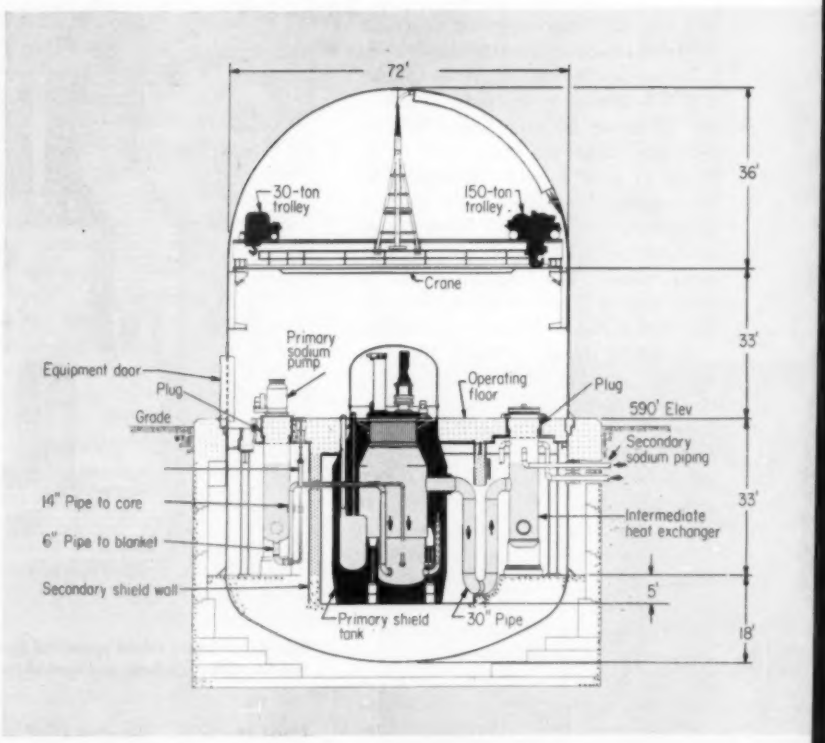

FIG. 2. Elevation view of Enrico Fermi reactor shows borated-graphite-and-carbon primary shield, concrete-and-steel secondary shield, concrete-and-steel biological shield that forms operating floor and rotating-plug shield. Primary and secondary sodium systems are also shown. High performance at low cost has been goal of shield design, but, in certain critical areas, cost and convenience have been sacrificed for shield adequacy and safety

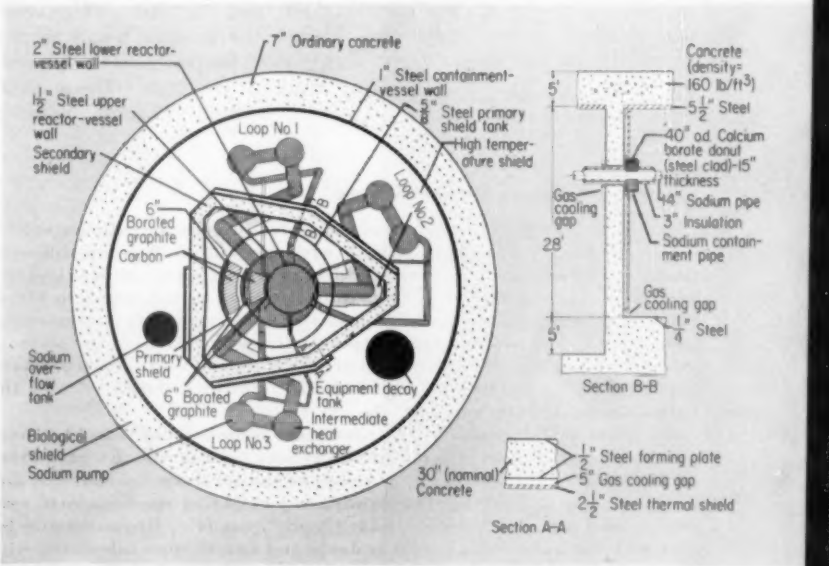

FIG. 3. Plan view of Enrico Fermi reactor shows high-temperature shield. Note that secondary shield is not cylindrical and that reactor vessel is eccentrically placed in primary shield tank. Secondary shield is in gamma radiation field of $\sim 1 \times 10^6$ r/hr

(see Fig. 5). The very fast neutrons (1 Mev and above) are attenuated by a factor of about 100; neutrons in the 0.05–0.5-Mev range are reduced a factor of about 20, and those in the 1–20-kev range are attenuated by a factor of only 2 or 3. Neutrons of lower energy than about 1 kev are not present in the core and blanket but are born in the steel and build up to a peak value. The appearance of a large number of low-energy neutrons in the steel is due to inelastic scattering.

Graphite shield. Outside the vessel, the graphite-and-carbon portion of the primary shield (see Fig. 4) is arranged so that no special cooling is required. A 6-in. layer of 5%-borated graphite will be located flush against the reactor vessel. Most of the heating of the primary shield will occur within this layer (see Fig. 6). Around this layer will be located electric heaters for preheating the reactor vessel. Directly outside of the heaters will be a 3-in. layer of insulation followed by 34 in. of carbon. (This thickness represents the primary shield through its thinnest section. The reactor vessel is eccentric to the primary shield tank so that the carbon region widens out to about 9 ft at the thickest portion of the shield.) Lining the inside of the primary shield tank will be another 6-in. layer of 5%-borated graphite.*

This shield will reduce the total neutron flux from a value of $\sim 10^{13}$ n/cm²/sec at the reactor-vessel wall to about 10^{5} n/cm²/sec at the primary-shield-tank wall.

* Certain areas of the shield linings will have 1% boration rather than 5%.

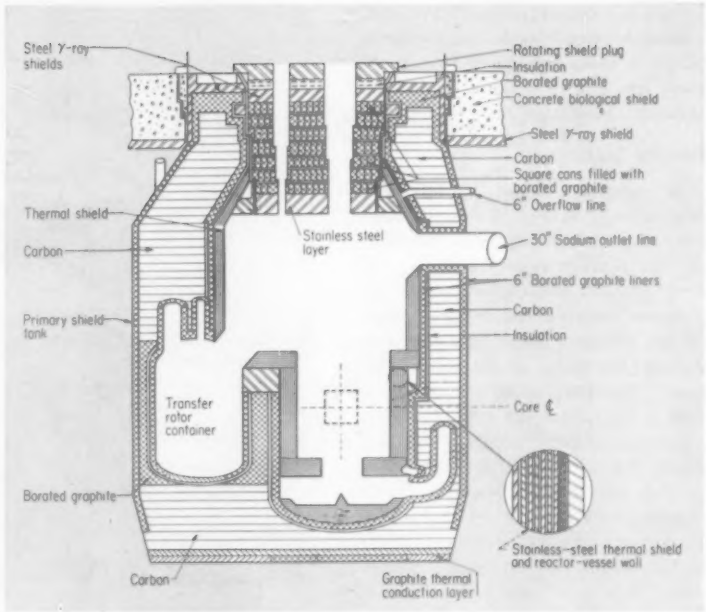

FIG. 4. Primary shield system of Enrico Fermi reactor. Holes through rotating plug are for refueling (left) and control-rod access (right)

Heat removal. Because graphite is an excellent conductor of heat, even after long irradiation, the heat generated within the inner 6 in. of borated graphite (~60 kw) will be conducted back to the vessel where the primary coolant will carry it away. Very little heat will be conducted through the insulation to the outer regions of the shield, and the total heat generation outside the insulation is only about 2.5 kw, just a few percent of that generated within the insulation. This amount of heat is easily dissipated outwardly through the shield material to the building atmosphere. Temperatures within the insulation will be near those of the coolant, averaging about 730° F, and will average about 350° F outside the insulation. The temperature distribution through the hottest section of the primary shield is shown in Fig. 7.

Heat removal from underneath the reactor vessel will be accomplished through a 2-ft-thick conducting path of graphite and borated graphite (see Fig. 4) such that heat in this area will flow to the side. Studies show that the maximum temperature of the bottom of the vessel will be less than 320° F, and no special cooling will be necessary. Properly mixed structural concrete should be able to withstand temperatures as high as 350° F without damage or loss of strength.

Safety considerations. The components of the primary shield described thus far have been designed with due regard for safety. Inside the vessel itself, the absence of moderating materials eliminates the possibility of transient reactivity effects caused by pieces of the shield breaking off and being swept into the core by the coolant. The graphite shield will be constructed of types of graphite and carbon that are impervious to the action of liquid sodium, and will be cemented together with a carbon-

Shielding-Calculation Techniques

Calculation of the attenuation of neutrons through the primary shield, shown in Fig. 5, was accomplished with the aid of 20-group diffusion theory. The average relaxation length of neutrons in the shield is 10.5 cm. The calculations of heat generation in the primary shield, shown in Fig. 6, were made using 20-group results and standard gamma-ray-attenuation techniques. The neutron energy spectra at various places in the primary shield shown in Fig. 10 were computed with the aid of multigroup analysis, age theory (3), modified "straight-ahead" diffusion theory (4) and the Bethe-Tonks-Hurwitz method (5).

For other shields, calculations were more conventional than they were for the primary shield. Removal theory was used in the determination of the required thicknesses of concrete in the secondary shield wall and in the biological shields. The gamma-ray shielding requirements were determined with the aid of standard techniques (6). Requirements for shielding streaming paths such as ducts and annuli were calculated with the aid of formulas such as those developed by Fisher (7). The shield for the 30-in. pipe was evaluated using several of the methods already mentioned, together with an analysis of the allowed neutron-current leakage to the heat-exchanger compartment.

TABLE 1—Costs of Shielding Materials

Material	*Cost* ($/lb)*	*Basis*
Concrete (140-lb density)	0.0042	In place
Concrete (160-lb density)	0.0058	In place
Carbon steel	0.21	Rolled, sized plates
Stainless steel	1.50–4.50	Fabricated shapes
Boron steel (1%)	0.45	Castings
Carbon	0.15	Material only
Graphite, plain	0.80	In place
Graphite, borated (1%)	1.50	In place
Graphite, borated (5%)	1.70	In place
Lumnite cement	0.037	Material only
Borated diatomaceous-earth-aggregate,	0.13	Material only
Calcium borate	0.52	Material only
Serpentine rock	0.018	Material only

* Estimates based on late 1957 prices.

aceous cement that will fill up voids and hard-to-fill places around piping and supporting structures to reduce unavoidable free volume within the shield to an absolute minimum.

In case of a leak of sodium into the graphite, the shield will act as a secondary containment, allowing the sodium level within the vessel to go no lower than the centerline of the 30-in. primary-coolant outlet pipe. The shield system will also absorb much of the energy of a pressure wave in the remote event of a rapid-energy-release accident and will also afford some missile protection.

Rotating-plug shield. An important part of the primary shield system is the rotating-plug shield, which functions both as a means of access to the reactor core and as a biological shield (see Fig. 4). The original design of this plug called for 18 in. of stainless steel followed by 7 ft of boron steel (1% B by wt) and 1 ft of carbon steel. Calculations showed this to be an adequate shield, but in subsequent designs the plug was lightened by use of borated graphite in place of some of the boron steel. It is now probable that very little boron steel will be used in the final design.

The present plug design calls for 18 in. of stainless steel followed by 7 ft of borated graphite and 2 ft of carbon steel, 1 ft of the latter being at the top of the plug and the other 1 ft distributed within the borated graphite to act as support layers for the graphite. A layer of insulation placed just under the top steel layer will enable most of the plug to be maintained at a high temperature to lessen the danger of sodium deposition near the moving parts. The graphite will be in square steel cans about 3 in. on a side and 1 ft high. Boron-steel chinkers will be used to fill odd-shaped areas.

Inside the control- and safety-rod actuator channels, and in the offset handling-mechanism channel, the shielding will consist, insofar as possible, of layers matching the rotating plug shield. Where this is not possible, stainless steel or boron steel will be used in combination with a special 112-lb/ft³ mixture containing 24 wt% iron, 70 wt% carbon, and 6 wt% boron.

Secondary Shield

The secondary concrete wall shown in Fig. 3 surrounds the reactor vessel and primary shield tank and has a perimeter of ~136 ft. It consists of a nominal 30-in. concrete wall with ½-in. steel cladding and is protected in some areas with 2.5-in. steel thermal shielding. During construction the cladding will serve as concrete forms. There is a 5-in. gap between the thermal shielding and the concrete to allow cooling by natural circulation of nitrogen (*2*).

The primary purpose of this shield is to prevent activation of the secondary coolant. This is necessary because the secondary coolant flows outside the containment building to steam generators located in areas occupied by personnel. Thus, the secondary shield is primarily a neutron shield and reduces the neutron-flux level to the order of 10^4 n/cm²/sec, and the activity of the secondary sodium has been estimated to be less than 2×10^{-4} μc/cm³.

Radiation sources. The total neutron-flux leakage from the primary shield tank is estimated to be about 2.2×10^8 n/cm²/sec (of which 11% are fast neutrons). Gamma rays emerging from the primary shield tank are mainly from three sources: (a) high-energy gammas from neutron capture in stainless steel, (b) 0.5-Mev gammas resulting from the $B^{10}(n,\gamma)Li^7$ reaction and (c) Na^{24} decay gammas. The prompt gammas emitted from sodium during neutron capture also contribute a small amount to the radiation level outside the tank. Attenuation by the primary shield reduces the core and blanket gamma-ray total radiation leakage to a very low level. Other

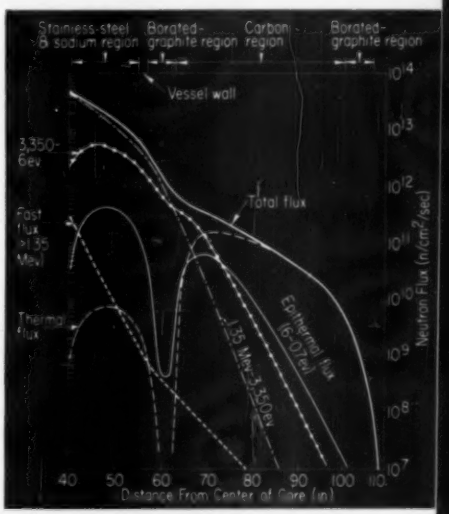

FIG. 5. Neutron fluxes in primary shield at centerline of core

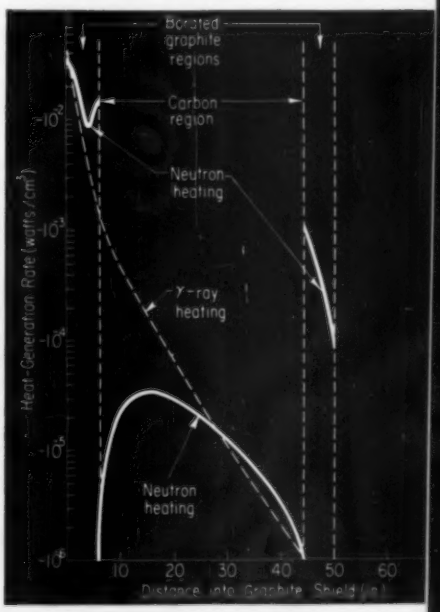

FIG. 6. Heat production in graphite of primary shielding

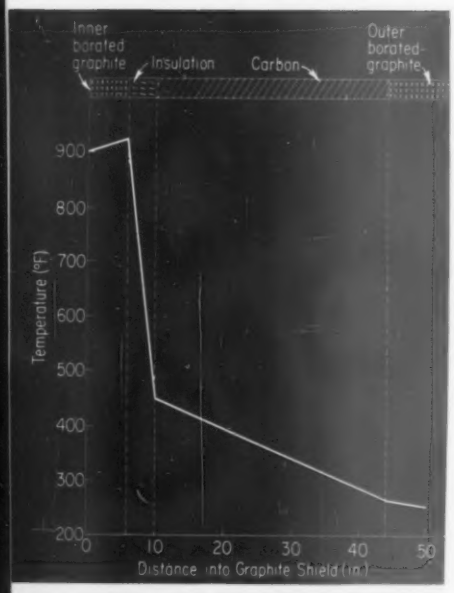

FIG. 7. Temperature distribution through graphite in primary shield

sources contribute a negligible amount.

The Na^{24} activity has been calculated to be 0.05 c/cm³ at the ultimate design power of 430 Mw(th).† Sodium-24 is produced by simple capture: $Na^{23}(n,\gamma)Na^{24}$. It has a half-life of 15 hr, decaying to Mg^{24} and emitting a beta ray and also two gamma rays of 1.38 and 2.76 Mev. There will also be a small amount of 1.28-Mev gammas from 2.6-yr Na^{22} produced from neutrons having energies >11.7 Mev by the reaction: $Na^{23}(n,2n)Na^{22}$. This presents no problems during reactor operation because the saturated specific activity of the Na^{22} at full power is estimated to be only of the order of 2 μc/cm³. The gamma-ray dose level in the lower compartments, due mainly to Na^{24} activity, is expected to be 10^4–10^5 r/hr at full power.

Protecting the concrete. The location of the secondary shield is such that there are strong gamma-radiation sources on both sides of the concrete wall. The interaction between the radiation and the concrete results in an energy transfer that heats the concrete. Any large amount of heating will have at least two deleterious effects: it will open up cracks and form voids within the concrete, and water of hydration will be lost. Each of these effects reduces the shielding value of the concrete. A 2.5-in. steel thermal shield is used in the areas near the largest Na^{24} gamma sources, i.e., the primary-coolant pumps, intermediate heat exchangers and primary-coolant piping, to protect the concrete by limiting the amount of heat generated in it. To prevent the loss of water of hydration, the maximum temperature in the concrete is limited to 200° F.

Temperature and stress distribution. The temperature difference $\Delta T(x)$ at any point in the concrete, in the case where equal fluxes are impinging on both faces in slab geometry, is given by the relation

$$\Delta T(x) = \frac{\mu_e E_\gamma \phi_o \lambda^2}{k}\left(1 + e^{-L/\lambda} - e^{-x/\lambda} - e^{-\frac{L-x}{\lambda}}\right)$$

where μ_e is the gamma-ray energy-absorption coefficient, E_γ is the average gamma-ray energy, ϕ_o is the gamma-ray flux incident on the face of the concrete, λ is the relaxation length for gamma rays heating in concrete (assuming an exponential attenuation), k is the thermal conductivity of concrete and L is the concrete shield thickness. The maximum temperature rise in the shield increases as the incident gamma energy flux on the surface increases, as shown in Fig. 8. Large temperature differences in the concrete will be avoided by the steel shield.

The amount of heat generated in the shield depends on the magnitude of the incident gamma-ray flux, the energy of the photons, the energy absorption coefficient of the material and the heating mean free path in the material. The maximum heat generation rate in the 30-in.-thick secondary concrete wall is shown in Fig. 9.

The thermal stress at any point in the wall can be represented by the equation

$$\sigma(x) = \frac{\alpha E q_o \lambda^2}{k(1-\nu)}\left(1 + e^{-L/\lambda} - e^{-x/\lambda} - e^{-\frac{L-x}{\lambda}}\right) + \sigma_o$$

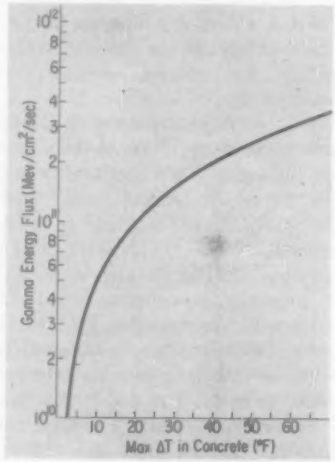

FIG. 8. Maximum temperature difference in concrete of secondary shield as function of incident gamma energy flux

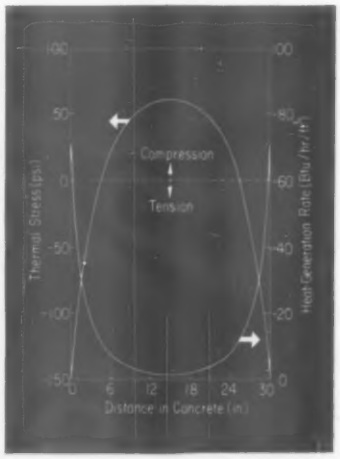

FIG. 9. Maximum thermal stress and volumetric heat-generation rate distribution in secondary-shield concrete due to gamma radiation

where $\sigma(x)$ is the thermal stress due to gamma radiation at distance x in the concrete, σ_o is a function of the building load, E is the modulus of elasticity of concrete, q_o is the volumetric heat-generation rate, α is the linear coefficient of thermal expansion of concrete and ν is Poisson's ratio. The maximum thermal stress distribution in the secondary concrete wall is shown in Fig. 9; ~5 in. of each side of the wall is in tension, the remaining 20 in. being in compression. It is normal practice to use reinforcing steel in areas of large tensile stress to avoid opening any cracks that could lead to neutron streaming.

Biological Shield

The biological shield for the Enrico Fermi plant consists, in part, of a 5–7-ft-thick steel-and-concrete shield covering the lower areas of the containment building. This shield also serves as

† The initial full power will be 300 Mw(th); this will later be increased to 430 Mw(th).

the operating floor (see Fig. 2). There are various access holes and openings in the floor which are fitted with shield plugs that match the shielding of the floor. A 7-ft concrete shield outside the containment building is integral with the inside shield and completes the biological shielding.

The biological shield is designed to allow a total radiation dose of no greater than 0.75 mrem/hr above the operating floor at the full expected power level of 430 Mw(th). Because of the large volume of radioactive sodium in the lower compartments, and because of the effectiveness of the primary shield in shielding out neutrons, the gamma radiation from the Na^{24} largely determines the shielding requirements for the biological shield.

There were several reasons for the choice of ordinary concrete and steel for the biological shield. First, a small layer of steel was required underneath the concrete to protect it, in certain areas, against excessive gamma-ray heating. Second, ordinary concrete, correctly installed, can serve as both a neutron and a gamma-ray shield and can be depended upon to give satisfactory service over the expected 10–20 yr plant life. High-density concretes were avoided because experience with them is limited—contractors know little about placement and construction techniques for such concrete. Third, cost estimates on this combination indicated that, all things considered, ordinary concrete and steel cost less than the equivalent amount of high-density concrete.

The steel thickness required in the biological shield floor averages about 5 in. but varies over various regions of the floor from 3½ in. to as much as 14 in. in some areas, particularly near possible streaming paths around access holes.

Sodium Pipe Shielding

The 30-in. primary-coolant outlet lines from the reactor vessel give rise to a large neutron leakage because of streaming through the sodium and in gaps around the pipes. Special shields (see Fig. 3) are necessary to prevent these neutrons from reaching the heat-exchanger compartment. These shields call for stringent physical requirements because the inner surface will be subjected to temperatures up to 1,000° F.

The material must double as insulation and must provide for pipe movements. Two materials meeting these requirements are presently being considered: borated, diatomaceous-earth-aggregate lumnite concrete, and pressed calcium borate material ($2CaO \cdot 3B_2O_3 \cdot 2H_2O$). In our application, part of the water of hydration will be lost because of the high temperatures. The Eagle-Picher Co. has developed borated diatomaceous earth-aggregate and Johns-Manville has developed calcium borate.

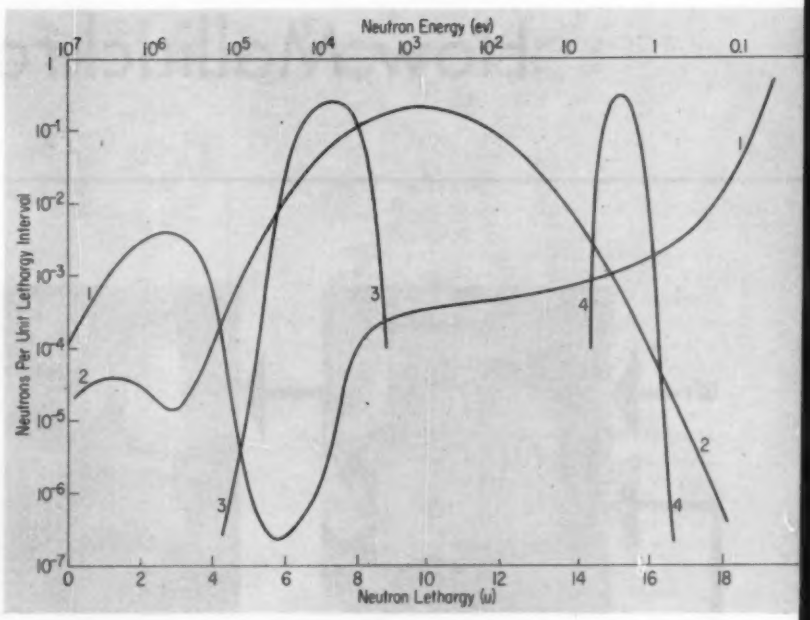

FIG. 10. Normalized neutron spectra at various locations in primary shield. Curve 1 was calculated by 20-group diffusion theory for graphite 40 in. from vessel wall at core centerline. Curve 2 is "straight-ahead" approximation for base of rotating plug. Curve 3 is Bethe-Tonks-Hurwitz approximation for 7 ft of boron steel in top of rotating plug. Curve 4 is "straight-ahead" approximation for 7 ft of borated graphite in top of rotating plug

Plug Shields

Temperatures to be expected in the primary-coolant pump and heat-exchanger plugs (see Fig. 2) will vary from a maximum of 250° F in the pump plug to over 800° F, at certain times, in the heat-exchanger plug. At these temperatures, ordinary concrete cannot be used. Limited space requirements or costs preclude the use of any of the other materials heretofore mentioned. The present design calls for the use of a concrete made from serpentine rock aggregate in lumnite cement within the plug containers. Serpentine is a type of asbestos with the formula $3MgO \cdot 2SiO_2 \cdot 2H_2O$. This material has a density of about 130 lb/ft^3—only slightly less than ordinary concrete. Serpentine has the attractive feature of being able to hold its water of hydration up to very high temperatures. Extensive tests at 800° F for 1,000 hr conducted by Johns-Manville indicate a water-loss rate of $<½\%$/yr after the initial loss of free water. Serpentine concrete has only one drawback—it has very little strength and must, therefore, be placed in a container or used where strength is not necessary.

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NOTE ADDED IN PROOF. Since this article was written, there has been a change in the status of three items mentioned in the text: (a) calcium borate was chosen for the 30-in. sodium pipe shielding, (b) finely ground serpentine rock was dry-packed into the heat exchanger plugs to a density of 130 lb/ft^3 and (c) further tests on various mixtures of serpentine concrete indicate that strengths over 1,000 psi are attainable.

How Mallinckrodt Converts

UF_6

1 Hydrolysis and precipitation

2 Filtration

3 Drying and reduction

6 Pellet pressing

Powder preparation

Sintering

Analysis

Process scrap:

- Filter bags
- Cleanup scrap
- Rejected pellets
- Destructive-test samples
- Analysis scrap

Acid digestion

8 Solvent extraction

Purified $UO_2(NO_3)_2$ solution

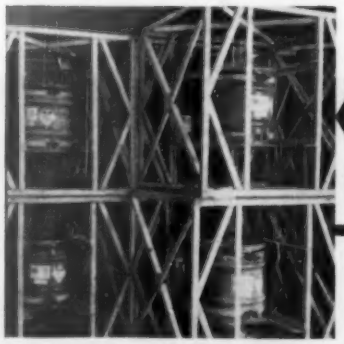
Enriched UF_6 to UO_2 Powder

By W. M. LEADERS
Mallinckrodt Chemical Works, St. Louis, Mo.

All enriched uranium comes from the gaseous diffusion plants of the AEC as UF_6. The conversion of UF_6 to UO_2 is now carried out by several manufacturers (NU, Aug. '58, p. 101). The conversion process includes the hydrolysis of UF_6, precipitation of the resultant ammonium diuranate (ADU) and eventual reduction to UO_2. Shown here in flowsheet form are the major steps as carried out in the low-enrichment (up to 5% U^{235}) section of Mallinckrodt's Hematite, Missouri, commercial uranium plant.

4 Grinding

5 Blending



7 Shipping ceramic-grade UO_2

To customer (turn page)

1 Hydrolysis and precipitation. Fork truck is inserting metal bottle of UF_6 (up to 430 lb) in hydrolysis hood. Bottle is enclosed in electrically heated water bath. Vaporized UF_6 is reacted with H_2O and NH_3 to precipitate ADU, a yellow salt.

2 Filtration. Workers are removing yellow salt from rubber-covered filter press. ADU is scraped off press and falls into trays that are placed in drying oven.

3 Drying and reduction. Worker removing trays of dried ADU from oven and inserting them in retort to be decomposed to U_3O_8 and reduced to UO_2 with NH_3. Following reaction, hot retorts are removed from furnaces and placed in cooling chamber.

4 Grinding. After cooling, retort is attached to back of unloading station and trays are removed and inserted in mechanical inverter, which spills powder into pulverizer. Ground material falls into 15-gal drum.

5 Blending. Each "limited-safe" batch, 40–300 lb, depending on % U^{235}, is in separate drum. Safe blending is accomplished by spacing ten drums in line and placing one-tenth of each into ten other drums. After drums are rolled and weighed, they are placed in "birdcages."

6 Pellet pressing. Quality control is accomplished by making sample pellets for analysis. Press can be operated slow-speed manual control for experimental work or high-speed automatic for production.

7 Shipping ceramic-grade UO_2. Steel-angle-iron birdcages are designed so that infinite array would not become critical even if completely submerged in water. Consignment is stacked here awaiting shipment.

8 Solvent extraction. Following completion of run, all equipment is washed down, dust collectors opened and cleaned, etc. Uranium collected is purified and returned to customer. Solvent extraction equipment is modified Scheible-type column using TBP and kerosene.

How General Electric Fabricates

By M. J. SANDERSON
and P. D. WRIGHT
General Electric Co., San Jose, California

Shown on the preceding two pages was the conversion of UF_6 to UO_2 powder. The production of sintered UO_2 pellets from this powder involves the following major steps: addition of a paraffin binder, ball milling, pressing to shape, heating to remove the binder and sintering. The entire sequence of operations for the fabrication of fuel elements for the Dresden reactor at General Electric's San Jose, California, plant includes these steps as well as others shown here.

1 Powder storage. Steel drums of UO_2 powder, still in the "birdcages" in which they are received from Mallinckrodt, are placed in fenced-off area adjacent to fuel-element-production building.

2 Powder processing. Each drum, when ready for use, is fitted with valved pouring cones and placed in cradle to facilitate loading special containers in foreground. Beginning of powder-processing line is in background.

3 Powder processing. Powder is mixed with binder and ball milled to attain uniform blend. It is then fed to pellet presses at left. When operating at full capacity, presses can turn out ~18,000 pellets per day.

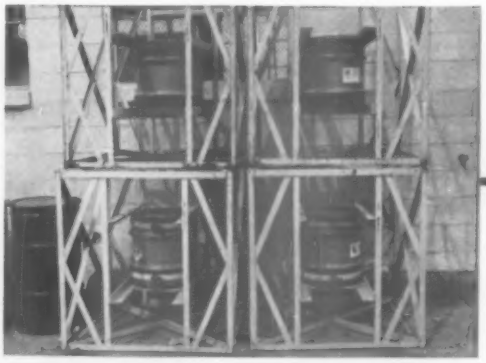
4 Powder processing. Pellets are moved by conveyor belt to next step; in one of few hand operations, worker inspects pellets and loads them into ceramic "boat" for sintering furnaces.

5 Heat treating. Each boat of pellets goes through two furnaces. In first furnace, heat removes binder; in second, sintering is done in hydrogen atmosphere at 1,550–1,700° C.

6 Fuel-rod loading. Automatic pellet-loading machine with cover raised shows sintered pellets (right) being fed into Zircaloy tubes (left). Feature of pellet-loading machine is that it will "key in" special pellets as needed. After loading, tubes are sealed with end plugs that are welded in place.

7 Corrosion testing. Worker lowers fuel-rod bundles into autoclave where they are subjected to temperatures and pressures that exceed actual reactor parameters. This is last of several quality-control tests.

8 Shipping. Completed Dresden element is lowered into shipping container. Element is made up of 36 ten-foot-long rods in square array; 488 such elements will make up Dresden core.



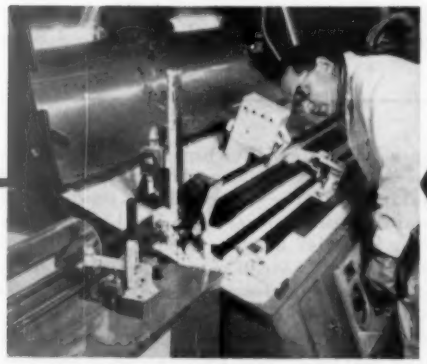
1 Powder storage

Welding
and
leak checking

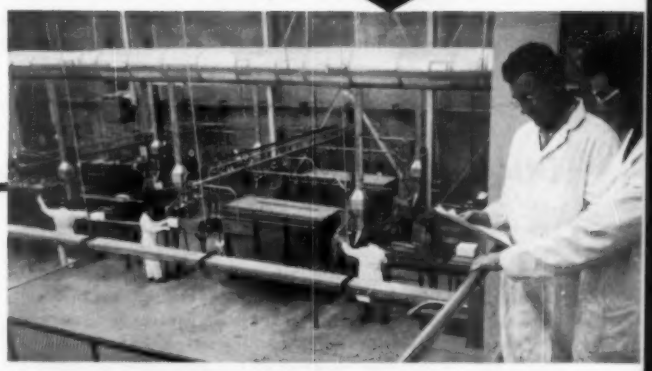
7 Corrosion testing

Fuel Elements for Dresden

2, 3, 4 Powder processing



6 Fuel rod loading



5 Heat treating

Assembly

8 Shipping

Thermal Design Criteria for Pressurized-Water Reactors

By W. M. JACOBI, J. D. ROARTY, N. C. SHER, K. M. TREADWELL, and J. E. ZERBE
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DESIGNERS of water-cooled reactors must prevent fuel elements from overheating during both normal and abnormal operation. Overheating leads to fuel-element melting (burnout) causing plant shutdown and problems in primary system decontamination. To avoid burnout, reactor designers must have an indication of safe limits for such parameters as heat flux, flow rate and temperature during any steady-state or transient condition that may arise.

The Bettis Plant has been conducting an intensive experimental program on boiling heat transfer and fluid flow over the past few years, in an effort to establish reasonable thermal-design criteria for water-cooled reactors. The following have resulted:

- A design equation to predict burnout heat flux as a function of mass velocity, bulk enthalpy, and local subcooling.
- A design equation to predict local boiling pressure drop for 0.097-in. rectangular channels.
- Bulk-boiling pressure drop data for 0.054- and 0.097-in. rectangular channels.

While the information is *specifically* applicable to reactors with thin (0.054–0.097-in.) rectangular flow channels operating at 2,000 psia, for preliminary evaluation the data can be applied to reactors with somewhat lower pressures and different flow geometries if coolant flow is parallel to the fuel elements.

This article does *not* consider deposition and corrosion and their possible effect on thermal design criteria. Whether or not these factors are harmful during steady-state boiling should be based on data for particular fuel-element materials.

Temperature Distribution

Assume (a) that a reactor core can be represented by a homogeneous right circular cylinder, (b) that inlet fluid conditions are known and (c) that the radial and axial heat flux distribution is known. The designer can then determine normal-channel coolant bulk

Burnout Explained

In water-cooled reactors, both burnout and thermal efficiency are determined by the liquid and vapor states of the coolant. The graph (p. 131) shows changes in heat flux for non-boiling, nucleate boiling, transition boiling, and film boiling conditions. For reactor operation, the nucleate boiling state is attractive because of the favorable heat transfer coefficient, and film boiling the most dangerous because of the possibility of burnout. Each fluid-vapor state in a reactor is characterized by a given set of hydrodynamic and thermal conditions. Here's how they affect heat transfer in the core:

NON-BOILING (region AB on the graph). The temperature of the heating surface is below the fluid's saturation temperature, and heat is transferred by convection. Extensive investigation of this region has produced equations, similar to equation 3 in this article, which predict heat transfer rates.

NUCLEATE BOILING (region BC on the graph). Nucleate boiling can occur with both subcooled and saturation liquid temperatures. Nucleate boiling begins when the temperature of the heating surface exceeds saturation by a few degrees. Bubbles nucleate on the surface and grow in a thin layer of liquid next to the surface. As the bubbles break away, they collapse or continue to grow depending on whether the bulk coolant is below or at the saturation temperature. The thermal resistance of the liquid film is greatly reduced by the agitation of the bubbles, making this an optimum heat transfer region.

TRANSITION BOILING (region CD on graph). Eventually the peak nucleate boiling heat flux (C) is obtained which is characterized by a vapor blanketing or hydrodynamic instability. In the region (CD) no liquid-solid contact exists; the heat transfer surface is blanketed by an unstable, irregular film in violent motion. Bubbles or globules of vapor break away from the surface removing heat by mass transport. Conduction and radiation through the vapor film in contact with the surface become more important mechanisms for heat transfer.

FILM BOILING (region DE on graph) is characterized by vapor film blanketing the entire heat transfer surface. The heat transfer coefficient is low; heat flux again increases with increasing temperature, but much more slowly than in the nucleate boiling region.

It should be noted that in a reactor application any attempt to increase heat flux above that at point C will put the surface into film boiling (somewhere along curve DE). Since the equilibrium surface temperatures, in film boiling, are usually high enough to melt the fuel element or at least are undesirable for metallurgical reasons, point C has been designated the "burnout point." The threat of film boiling, therefore, always tempers the reactor designer's desire to operate near the peak of the nucleate boiling region.

Reactor Design

Engineering judgement dictates the amount of "thermal margin" that must be built into a design. Designers usually examine possible abnormal conditions, then determine which of these are sufficiently important to influence design; then they design a reactor to operate safety under these conditions.

enthalpy at any radius, r, and length, z, by integration of the flux distribution

$$H(r,z) = H_{in}(r,o) + \frac{b}{W}\int_0^s \phi(r,z)\,dz \qquad (1)$$

The flux distribution $\phi(r,z)$ can in turn be represented by a normalized power distribution constructed from one-dimensional radial and axial power distributions

$$\phi(r,z) = \bar{\phi}\,\frac{p(r,z)}{\bar{p}}$$

where $\bar{\phi}$ is the core average heat flux, $p(r,z)$, the power distribution, and $\bar{p}$ the average power over the volume of the core.

When normal-channel coolant bulk enthalpy $H(r,z)$ is less than H_{sat} for the system pressure, the change in coolant temperature from inlet to point z is:

$$T_b(r,z) - T_b(r,o) = \frac{H(r,z) - H(r,o)}{\bar{c}_p}$$

If $H(r,z)$ is equal to or greater than H_{sat}

$$T_b(r,z) = T_{sat}$$

and

$$\text{Steam quality } x = \frac{H(r,z) - H_{sat}}{H_{fg}}$$

During nonboiling conditions the surface temperature of the normal-channel walls $T_w(r,z)$ is given by

$$T_w(r,z) = T_b(r,z) + \frac{\phi(r,z)}{h_{avg}} \qquad (2)$$

where h_{avg} is the average heat-transfer coefficient. A review of available information applicable to pressurized-water-reactor conditions (*1–4*) indicates that for design purposes, the average heat-transfer coefficient should be given by

$$h_{avg} = \frac{k_b}{D_e}\,0.019\left(\frac{GD_e}{\mu}\right)_b^{0.8}\left(\frac{c_p\mu}{k}\right)_b^{0.4}$$

$$\text{for } 50{,}000 < \left(\frac{GD_e}{\mu}\right)_b < 700{,}000 \qquad (3)$$

with all fluid properties evaluated at the bulk coolant temperature. The coefficient 0.019 is reduced from the 0.023 value in the Dittus and Boelter equation (*3*) to allow for a −20% deviation in experimental data.

Generally there is a water-reflector heat flux peak at the bottom of the core. However, because the local heat transfer coefficient is increased in the entrance region, this flux peaking usually is not limiting in surface-temperature calculations.

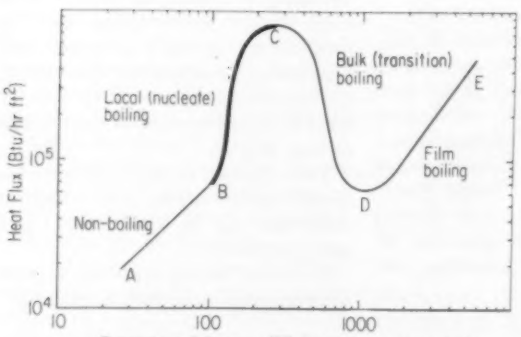
Experimental investigation has determined that the temperature of the heat-transfer surface during nucleate boiling is essentially independent of water temperature and velocity and is dependent only on the heat flux and coolant pressure. The empirical correlation for the temperature of the heat transfer surface, $T_w(r,z)$ is

$$T_w(r,z) = T_{sat} + \frac{60\left[\dfrac{\phi(r,z)}{10^6}\right]^{1/4}}{e^{P/900}} \qquad (4)$$

where P is system pressure in psia.

When the wall temperatures reach the temperature level given by the above equation, nucleate boiling is considered to have started. Bulk boiling begins when the bulk fluid temperature equals the saturation fluid temperature.

Hot channels. The "hot-channel" concept is used to determine the worst thermal conditions within the core. Normal-channel enthalpy rise and film temperature difference are modified by separate hot-channel factors $F_p(r,z)$, $F_H{}^E$, $F_Q{}^E$, and $F_\phi{}^E$ which reflect the effects of heterogeneous nuclear characteristics and manufacturing tolerances upon core performance (*5*). For example, the withdrawal of the rods from a core will produce local power peaks along the rod channels. This



For example, since experience indicates that loss of coolant flow is a relatively likely condition in pressurized water reactors, they are usually designed to meet this abnormal condition.

Loss of coolant flow can result from complete loss of power to the main coolant pumps. Flow through the reactor declines rapidly, reaching zero, or the natural circulation value, in a few seconds. In a reactor with an appreciable negative temperature coefficient, reactor power level will also decline as the coolant temperature rises, but in general this decline in power level is much less rapid than the decrease in flow. Some time during this process, the control system will sense either the rise in system temperatures or the decline in flow and will initiate a scram. The protection problem is to insure that the thermal criteria are met up to and including the time at which the scram becomes effective.

In a typical case, a designer knows that a scram will become effective seconds after the loss of pumping power. His problem is to calculate the burnout safety factor existing during that time. In actual practice such calculations are usually made on a digital computer where more rigorous solution of the heat-transient equation is possible; but to demonstrate the use of the equations the transient may be analyzed as a steady state problem under the conditions existing at the time of the scram. If the designer knows the average channel flow and power distribution, he can calculate the proper safety factor in 5 steps. He must:

1. Determine the normal channel temperature distributions, using Eqs. 1, 2, 3, and 4.

2. Calculate the pressure drop across the normal channel. This may be done using Eq. 8, incorporating the normal entrance and exit losses. Note that calculation of pressure drops involves a complete determination of channel thermal conditions.

3. Assume a flow rate through the hot channel and calculate the coolant pressure drop in the hot channel, using Eqs. 4, 5, 6, 7, and 8 or 9.

4. Compare calculated pressure drop to that in the normal channel; if they are identical, the assumed flow value is correct. If not, the designer must repeat the process with different values of hot channel flow until the pressure drops match.

5. Calculate the minimum value of burnout safety factor which exists in the hot channel, using the correct value of hot channel flow.

power peak is combined into Eqs. 1 and 2 by introducing a local peaking factor $F_p(r,z)$ which gives a hot channel flux distribution as

$$\phi(r,z) = \bar{\phi}\,\frac{p(r,z)}{\bar{p}}\,F_p(r,z) \qquad (5)$$

Other hot-channel factors, the so-called "engineering" factors (*5*) arise from either (a) deviations in fuel-element and coolant channel geometry (mainly due to manufacturing tolerances or to dimensional changes after irradiation) or (b) from deviations from a uniform flow pattern in the core and plenum chambers. These factors are designated as $F_H{}^E$ for the enthalpy-rise term, and $F_\theta{}^E$ for film-temperature difference term. Hot-channel fluid enthalpy during non-boiling conditions can then be calculated by inserting the engineering hot channel factors into Eqs. 1 and 5:

$$H(r,z)_{H.C.} = H_{in}(r,o) + \frac{b\bar{\phi}F_H{}^E}{W}\int_0^z \frac{p(r,z)}{\bar{p}}\,F_p(r,z)dz \qquad (6)$$

The hot channel surface temperature during local and bulk boiling conditions is estimated by

$$T_w(r,z)_{H.C.} = T_{sat} + \frac{60\left[\dfrac{\phi(r,z)_{H.C.}}{10^6}\right]^{1/4}}{e^{P/900}} \qquad (4a)$$

where

$$\phi(r,z)_{H.C.} = \bar{\phi}\,\frac{p(r,z)}{\bar{p}}\,F_p(r,z)F_Q{}^E$$

$F_Q{}^E$ is the engineering hot channel factor for heat flux as defined in (*5*).

For nonboiling conditions the hot-channel surface temperature is

$$T_w(r,z)_{H.C.} = T_b(r,o) + \frac{b\bar{\phi}F_H{}^E}{W_z}\int_0^z \frac{p(r,z)}{\bar{p}}\,F_p(r,z)dz + \frac{F_\theta{}^E\bar{\phi}F_p(r,z)\,\dfrac{p(r,z)}{\bar{p}}}{h_{avg}} \qquad (7)$$

Pressure Drop

The designer's second step in calculating the burnout safety factor is to calculate the pressure drop in the core channels. Pressure-drop calculation procedures for 2,000 psi are based upon a substantial amount of experimental data obtained at the Bettis Plant. The tests studied steady-state vertical upflow in rectangular channels at 2,000 psia, under the following conditions (*6*):

Static pressure	2,000 psi
Channel dimensions	0.097 in. × 1.0 in. × 27 in. long and 0.054 in. × 1.0 in. × 27 in. long
Heat flux	$\leq 10^6$ Btu/hr-ft²
Mass velocity	0.7–5 × 10^6 lb/hr-ft²
Inlet temperature	400°–625° F
Exit-steam quality	≤40%

The experimental isothermal friction factors f_{iso} are shown in Fig. 1. This data was obtained from tests both before and after heat flux had been applied to the test specimens, and after various operating conditions, including local and bulk boiling. While this data essentially agrees with the smooth Moody curve, a slight roughness factor ($\epsilon/D_e = 7 \times 10^{-5}$) would explain the difference between the experimental curve and the smooth Moody curve at the higher Reynolds numbers.

Figure 2 presents the non-isothermal pressure-drop data in another form. Values for f/f_{iso} during heating fall essentially between 0.8 and 1.0 for the range of conditions studied. The design recommendation here is $f = f_{iso}$, where f_{iso} is obtained by applying the appropriate roughness factor (*7*).

Local-boiling pressure drop. A summary of the local-boiling pressure-drop data, also in the form of f/f_{iso} plotted against T_b, is included in Fig. 2. The available data indicate that at a given heat flux and local subcooling, f/f_{iso} increases with decreasing mass velocity. Furthermore, at a given mass velocity and local subcooling, f/f_{iso} increases with increasing heat flux. The effect of equivalent diameter has not been specifically determined, but the design recommendations given in the following paragraphs are conservative estimates adequate for the pressurized water reactors now being designed. The data for reactors operating at 2,000 psia indicate that even though local boiling may be predicted to begin at a calculated bulk temperature considerably below 560° F, the values for f/f_{iso} do not exceed unity until the bulk temperature has reached at least 560° F.

The design recommendation for friction factors during local boiling at 2,000 psia can be analytically represented as follows:

For local boiling beginning at bulk temperatures below 560° F, use

$$f = f_{iso} \text{ for } T_b \leq 560°\text{ F}$$

$$\text{and } f = f_{iso}\left[1 + \frac{T_b - 560}{126.3}\right] \text{ for } 560°\text{ F} \leq T_b \leq 635.8°\text{ F}$$

For estimating high-pressure friction factors at other pressures, the number 560 should be interpreted as $T_{sat} - 76$ and 635.8 should be interpreted as T_{sat}.

For local boiling beginning at a bulk temperature (T_{lb}) above 560° F,

$$\text{use } f = f_{iso} \text{ for } T_b \leq T_{lb}$$

$$\text{and } f = f_{iso}\left[1 + \frac{T_b - 560}{126.3}\right] \text{ for } T_{lb} \leq T_b \leq 635.8°\text{ F}$$

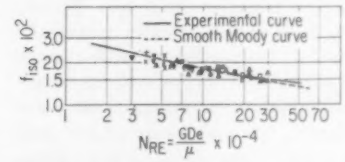


FIG. 1. Isothermal friction factors. Experimental curve vs. smooth Moody curve for 11 channels, 0.053–0.100 in. thick. All channels were 27 in. long, 1 in. wide; pressure = 2000 psia

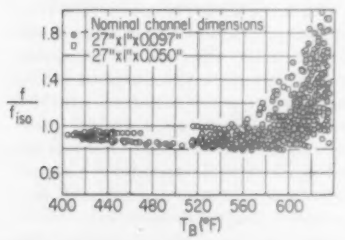


FIG. 2. Heating and local boiling pressure drop for vertical upflow in rectangular channels at 2000 psia

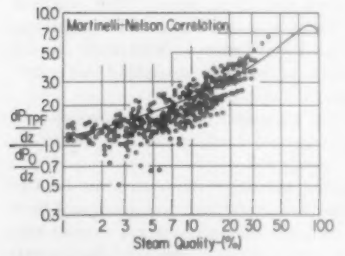


FIG. 3. Bulk boiling pressure drop at 2000 psia for vertical upflow in rectangular channels (fog flow assumed)

These equations may create a discontinuity in f/f_{iso} which actually does not exist, since for any given test, f/f_{iso} increased in a continuous fashion. However, the above recommendation represents the progress to date in describing this behavior. The specified friction factors may be used with the usual equation for single phase, steady state flow to estimate the total pressure drop for upflow in a vertical channel of uniform cross section.

$$(\Delta P_T)_{1-2} = \frac{1}{144}\left[\int_1^2 \frac{1}{v}dz + \frac{G^2}{g_c}(v_2 - v_1) + \frac{G^2}{2g_cD_e}\int_1^2 f\,v\,dz\right] \quad (8)$$

Bulk boiling. Fig. 3 presents the data for bulk boiling pressure drop as the ratio of the two-phase frictional pressure-drop gradient to the corresponding isothermal single-phase gradient plotted against the steam quality x where

$$\frac{dP_{Lo}}{dz} = \frac{1}{144}\left[\frac{G^2}{2g_cD_e}(f_{iso}\,v)_{sat\,liquid}\right]$$ and $(f_{iso})_{sat\,liquid}$ is determined considering $N_{Re} = \frac{GD_e}{\mu_{sat\,liquid}}$ and the appropriate roughness (*7*).

At a given flux and quality, Φ_{Lo}^2 increases with decreasing mass velocity. The effect of equivalent diameter, heat flux, and flow have not been predicted quantitatively as yet, so the recommendation is simply the Martinelli-Nelson prediction of Φ_{Lo}^2 (*8*).

The design recommendation for calculating bulk-boiling pressure drop at 2,000 psia utilizes the homogeneous model with the Martinelli-Nelson frictional pressure drop. Due to the uncertainties associated with the region where bulk boiling begins, the following conservative modification is suggested:

for $x \geq 4.2\%$ use Martinelli-Nelson values for Φ_{Lo}^2

for $x \leq 4.2\%$ use $\Phi_{Lo}^2 = 1.6$

Values for Φ_{Lo}^2 may be used with the usual equation for single-phase, steady-state flow to estimate the total bulk-boiling pressure drop in a vertical channel with a uniform cross section (assuming homogeneous flow)

$$(\Delta P_T)_{1-2} = \frac{1}{144}\left[\int_1^2 \frac{1}{\bar{v}}dz + \frac{G^2}{g_c}(\bar{v}_2 - \bar{v}_1) + \frac{f_{sat}G^2v_f}{2g}\int_1^2 \Phi_{Lo}^2\,dz\right] \quad (9)$$

Nomenclature

A	Heat transfer area, ft²
b	Channel heat transfer area per unit length, ft²/ft
c_p	Specific heat of liquid, Btu/lb$_m$/°F
D_e	Equivalent diameter, ft
f	Friction factor
F_c	Burnout correlation factor
F_p	Physics hot channel factor due to water hole peaking
F_H^E	Engineering hot channel factor for enthalpy rise
F_θ^E	Engineering hot channel factor film temperature rise
F_s	Recommended burnout uncertainty factor, $\frac{\phi_{B.O.}}{\phi(r,z)}$
g_c	Conversion factor, ft/hr²
G	Mass velocity, lb$_m$/ft²-hr
h	Convection heat transfer coefficient, Btu/hr-ft²·°F
H	Enthalpy, Btu/lb$_m$
H_{fg}	Latent heat of evaporation, Btu/lb$_m$
k	Thermal conductivity, Btu/hr-ft²·°F/ft
L	Distance from inlet of channel to burnout point, ft
N_{Re}	Reynolds number, D_eG/μ
p	Power, Btu/hr-ft³
P	Static pressure, lb/in²
F_Q^E	Engineering hot channel factor for heat flux
r	Radius, ft
T	Temperature, °F
v	Specific volume, ft³/lb$_m$
v_f	Specific volume of saturated liquid, ft³/lb$_m$
v_{fg}	Specific volume of saturated vapor minus specific volume of saturated liquid, ft³/lb
W	Flow rate in a channel, lb$_m$/hr
x	Steam quality, $\frac{\text{vapor mass}}{\text{mixture mass}}$ calculated assuming thermodynamic equilibrium
z	Distance along channel, ft
ϵ	Absolute roughness, ft
μ	Dynamic viscosity, lb/ft-hr
ϕ	Heat flux, Btu/hr-ft²
ΔT	Local bulk coolant subcooling, °F
Φ_{Lo}^2	Ratio of two phase frictional pressure drop gradient to corresponding isothermal gradient, $\Phi_{Lo}^2 = \frac{dP_{TPF/dz}}{dP_{Lo/dz}}$ where $\frac{dP_{Lo}}{dz} = \frac{f_{sat}G^2v_f}{2g_cD_e}$

Subscripts

b	Evaluated at bulk conditions
iso	isothermal
sat	saturated value
l	property of liquid
lb	local boiling
T	total
TPF	two phase flow
W	wall
1	channel position upstream from 2
2	channel position downstream from 1

where $\bar{v} = v_f + xv_{fg}$ and v_f and v_{fg} are evaluated at the saturation pressure.

Two-phase exit-loss coefficients can be estimated on the same basis as the corresponding single-phase coefficient using $1/\bar{v}$ for the fluid density.

Burnout Design Equations

In order to apply burnout data obtained on uniformly heated ducts to reactor core heat transfer channels, the burnout flux is expressed as a function of the local fluid conditions in the channel. This is done in view of the nonuniform distribution of heat flux in a reactor. A program of burnout testing at 2,000 psia has been underway at the Bettis Plant on rectangular channels and round tubes of various equivalent diameters, lengths, materials, and surface finishes. This program was carried out principally in the bulk boiling region. Outside data (*1, 9*) provided subcooled burnout information.

In the subcooled region, the burnout heat flux is (*1*):*

$$\frac{\phi_{B.O.}}{10^6} = 0.445\,F_c\left(\frac{G}{10^6}\right)^{0.5}\Delta T^{0.22} \quad (10)$$

In the bulk boiling or quality region, burnout is defined as the minimum value calculated from either of the following two equations (*10*):

* The equation in this reference does not contain the F_c correction factor.

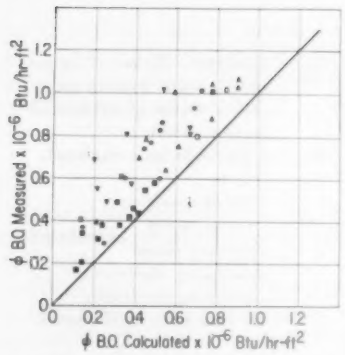


FIG. 4. Comparison of Bettis data with design equation. ϕ B.O. is the minimum value calculated from either equation 11 or 12

$$\frac{\phi_{B.O.}}{10^6} = 0.60\ F_e \left(\frac{G}{10^6}\right)^{0.7} \left(\frac{H}{10^3}\right)^{-0.8} \quad (11)$$

$$\frac{\phi_{B.O.}}{10^6} = 0.30\ F_e \left(\frac{H}{10^3}\right)^{-3.0} \quad (12)$$

L/D_e Effect on Burnout

L/D_e	F_e
< 65	0.90
65 < L/D < 150	0.80
150 < L/D < 300	0.60
300 < L/D < 500	0.40

The L/D_e correction factor has been estimated from all known sources of data at 2,000 psia and must be interpreted as representing the judgment of the authors. This factor is purposely tabulated as a step function to illustrate that the L/D_e effect is not understood and caution must be exercised in extrapolating the data to high values of L/D_e.

F_e, the length-to-diameter correction factor, is evaluated from the table; L is the distance from the channel inlet to the burnout point and D_e the equivalent diameter. Limits on the burnout equations are:

Pressure—2,000 psia

Geometry—round tubes and rectangular channels similar to those used in the pressure-drop tests

Mass Velocity—0.2–4 × 10^6 lb/hr-ft²

Local enthalpy at burnout point—650–1,136 Btu/lb

Test section position—45 deg and vertical

The equations presented above are design equations and do not necessarily represent the best fit to the data. Fig. 4 is a comparison of Bettis Plant bulk-boiling burnout data with the design equation. All of the experimental data are somewhat higher than predicted by Eq. 11 or Eq. 12. The burnout equations suggested herein were determined by assuming that the burnout heat flux could be predicted on the basis of the local fluid conditions. A review of all available 2,000 psia burnout data indicates that burnout is affected by length-to-diameter ratio: the larger the L/D_e, the lower the burnout heat flux.

Inlet subcooling also affects burnout: the larger the inlet subcooling, the higher the burnout heat flux. The design equations represented herein are based on a very low inlet subcooling,

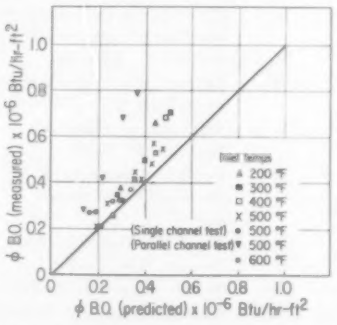


FIG. 5. Experimental vs. theoretical values of ϕ B.O. for 27 in test channels with equivalent dia of 0.10 in. At 2000 psia, burnout occurred at approximately ¾ the distance from inlet to exit of test section

where almost saturated water is admitted to the inlet of the test section. It is believed that burnout will occur at a higher heat flux than predicted by the above equations if the inlet subcooling is higher.

Burnout Safety Factors

A safety or uncertainty factor, F_s, on the ratio $\phi_{B.O.}/\phi(r,z)_{H.C.}$ is recommended because of uncertainties and gaps in the experimental data. The resultant uncertainty factor is the product of the following:

• **Transient effects.** A few power-pulse burnout tests on rectangular channels (*10*) indicate that for rapid heat transients the burnout flux may be higher than when burnout is approached slowly. However, there is no available data on transient-boiling pressure drop. The combination of these two effects may be estimated as $F_s = 1.10$.

• **Unevenly heated channels.** Limited burnout tests were run on a rectangular channel with a cosine axial heat-flux distribution. Fig. 5 compares this data with the burnout design equations. In view of the very limited amount of data available, and the fact that only one type of nonuniform flux distribution was investigated, it is reasonable to include some conservatism for nonuniformly heated channels. $F_s = 1.10$ is suggested.

• **Local boiling.** The local-boiling pressure drop design equations suggested herein are generally conservative, but since the data have not been adequately correlated, $F_s = 1.05$ is suggested.

• **Bulk boiling.** The Martinelli-Nelson method of calculating frictional pressure drop seems to represent a best fit of the data. Fig. 3 compares Bettis data with the Martinelli-Nelson prediction, assuming fog flow. The maximum error limit on the Martinelli-Nelson correlation is probably 30–40% (*8, 11, 12*). For most reactors currently under design at Bettis, the length of channel which may enter transient bulk boiling is small enough that the maximum error in the Martinelli-Nelson correlation might reduce the burnout flux by 10%, so a factor of $F_s = 1.10$ is suggested.

• **Instabilities.** During the burnout programs at Bettis, Battelle Memorial Institute, and MIT, certain instabilities were noted which seemed to cause premature burnout. The nature of these instabilities was never thoroughly understood (*10*). The magnitude of the reduction in burnout flux for those instabilities observed is about 5%. However, because of the anomalous nature of these instabilities, a very conservative safety factor, $F_s = 1.20$ is recommended.

• **In-pile burnout.** The results of the Bettis Plant in-pile burnout tests indicated higher burnout fluxes than those obtained from electrically-heated tests (*13*). This has been considered by suggesting a value of $F_s = 0.9$.

The product of these uncertainty factors is 1.5.

In calculations which consider the burnout safety factor, it should be remembered that adjustments in safety factor cannot be made by correspond-

Continued on page 199.

Criteria for Test Reactors

Designing for high thermal utilization and proper use of reflectors can push the neutrons available per Mw closer to the theoretical limit

By BERTRAM WOLFE
Atomic Power Equipment Dept., General Electric Co., San Jose, California

SINCE THE COST of a research or test reactor facility is usually in excess of a million dollars and may run to tens of millions of dollars, the reactor should be designed to get as many experimental neutrons as possible per megawatt of reactor power.

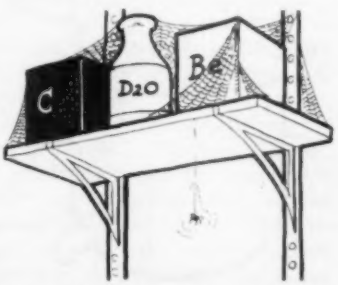
The reactor designer and the reactor purchaser are faced with a wide choice in reactor designs. The comparison of mechanical characteristics, although complicated by nuclear considerations, can be based upon a background of everyday experience. The difficulty in the purchase or design of a reactor comes in trying to evaluate the *nuclear* characteristics.

To provide as many neutrons as possible for absorption in experiments, a test reactor should be designed from a nuclear point of view so that the thermal utilization (and therefore the neutron leakage from the fuel region) is high. In general, most of this leakage can then be absorbed in the experiments if the core regions between experimental facilities are small. In reactors built primarily with beam-port facilities, the core should be small with beam ports placed adjacent to the core. In test reactors designed primarily for in-core experiments, the experimental facilities should be distributed throughout the core so that they are separated by only thin regions of fuel. High-performance reflectors should only be used for test reactors in which in-core facilities represent the major experimental regions. The design of a reflector must be examined in each case to see that it actually increases the flow of neutrons into the experimental regions rather than increasing flow into the moderator and structural material in the core.

Neutron Conservation

The maximum number of neutrons available for experimental use is limited and is determined only by the power level of the reactor. For every neutron absorbed by a fuel atom, 2.08 neutrons are produced. Of these one must be captured by another fuel atom to keep the chain reaction going. There will thus be at most only 1.08 neutrons per fuel capture which are available for capture in the experiments.

The 1.08 neutrons per fuel capture will in practice not all be available for experimental use. Some of them will be captured in the moderator and structural material within the fuel region. The ratio of the number of captures in fuel to the number of captures in fuel plus moderator and structural material is the thermal utilization f.



Except in very special cases, there is little advantage in using D_2O, Be or graphite moderators

Since one of the 2.08 neutrons is captured in a fuel atom, $1/f$ represents the total number captured in the fuel region and $2.08 - 1/f$ the number which leak out of the fuel region (per capture in fuel) and are available for capture in strategically located experimental facilities.

Thus, to make a test or research reactor efficient the thermal utilization in the fuel section should be high and the experimental facilities placed to receive the neutrons leaking from the fuel.

If f is 1.0, there will be 1.08 neutrons per U^{235} capture available to experiments. This amounts to a maximum value of 3.3×10^{16} neutrons/sec absorbed in the experiments for each megawatt of thermal power. This maximum figure is a constant independent of reactor design, whereas the actual number leaking to experiments depends upon the thermal utilization in the fuel region of the particular reactor considered. A low thermal utilization indicates that a large number of neutrons are being absorbed by the moderator and structural material rather than by experiments.

Choice of Moderator

There are a number of reactor designs that use heavy water, beryllium or graphite rather than light-water moderators because of their low absorption cross sections. Such reactors have lower fuel loadings than comparable

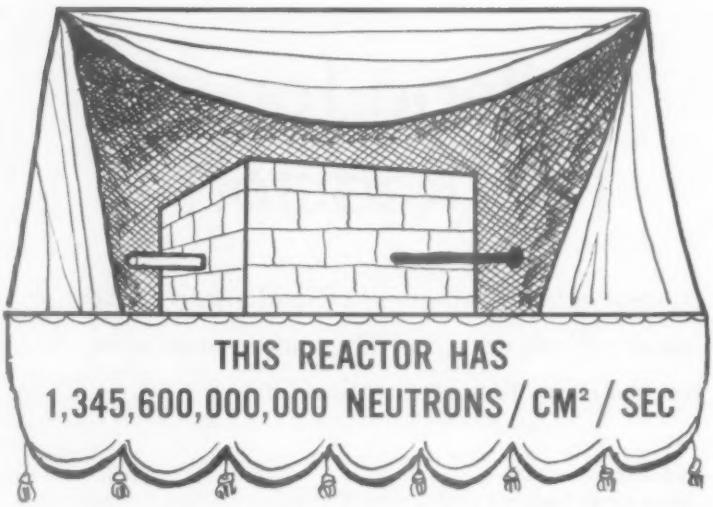
light-water reactors.* However, as we have seen, the important consideration for reactor efficiency is not fuel loading, but rather thermal utilization.

In a light-water reactor, most of the non-U^{235} capture in the fuel region takes place in the water. In the heavy-water reactor, most of the parasitic captures take place in the cladding. Since the extra fuel of the light-water reactor allows the U^{235} to compete more favorably with the water for the neutrons in the fuel region one finds that the percentage of neutrons captured in U^{235} to the total absorptions in the fuel region is not very different for a properly designed light-water reactor than it is, for instance, in a heavy-water reactor.

We conclude that the efficiency of a reactor does not necessarily depend upon the moderator used, and that with proper design, higher fuel loading can compensate for the higher absorption cross section of light water.

Flux-Level Fallacy

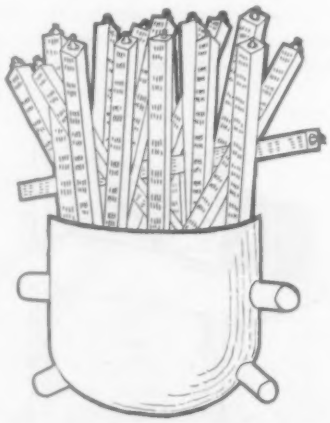
The discussion above points to a serious, but common, misunderstanding about the significance of the neutron flux level in test reactors. In general, reactor manufacturers and reactor operators quote the average flux level in the reactor core. This value is frequently interpreted as a measure of reactor efficiency. However, as we have seen, the flux level in the fuel (which depends only on the power level and fuel loading) provides no direct information about the number of neutrons which are available to experiments. As a matter of fact, for efficient design, the fuel loading and thus the thermal utilization in the fuel region should be high so that a large percentage of the available neutrons leak from the fuel into experimental facilities. One thus finds the paradoxical result that an efficiently designed reactor with a high neutron current into the experiments will have a high fuel loading and, therefore, a low flux level within the fuel region of the core. The only reliable criteria for judging the efficiency of a reactor design is to see that the thermal utilization is close to 1.0 and that the experimental facilities are placed in such a way that the neutrons leaking from the fuel are available in the experiment setup.



The average neutron flux level gives little indication of the actual neutron flux available to experiments

The flux-level fallacy is most apt to crop up in proposals for reactors with low-absorption-cross-section moderators. For the same power level, these reactors have a lower fuel inventory and consequently a higher thermal flux level than a light-water reactor.

It should be remembered, however, that this relatively high neutron flux, such as is found in a heavy-water reactor for instance, is not available for absorption in an experiment. As soon as an absorbing experiment is placed in the core, the neutron balance is disrupted and the flux level decreases. In more picturesque terms, one might say that there is a lot of water for swimming, but not much for drinking. The large flux depression produced by an absorbing experiment placed in a heavy-water reactor is a well-known phenomenon.



Contrary to popular belief, efficient test reactors should have a high fuel loading

There are special cases where high flux is required, but where the needs of an experiment in terms of actual absorption of neutrons are small. For instance, in activating a material with an extremely small cross section, the neutron absorption will be small but the activation will be proportional to the flux in which the sample is placed. Since very few neutrons are absorbed, the flux will not be distorted by the insertion of the sample.

But, light-water reactors could also be designed for such applications. For instance, a large piece of beryllium or a can of heavy water might be placed in the central area to form a region of very high flux into which samples could be placed. Indeed, reactors such as the NTR have been built with a central region containing a low-absorbing moderator (graphite) which is supplied with neutrons from a water-moderated annular core. Such a reactor produces a greatly peaked thermal flux in the central low-absorbing region, but it should be emphasized that although the flux is high, the number of neutrons that may be absorbed in this region is very low.

It is perhaps illuminating to illustrate the difference between neutron flux and neutrons actually available for experiments by considering the situation with regard to beam ports. For a 1-Mw swimming-pool reactor, thermal-flux quoted values of 10^{13} are

* We exclude from discussion heavy-water test reactors where a major object is to utilize natural or only slightly enriched uranium. These reactors are inefficient from a neutron-utilization viewpoint since neutrons captured in U^{235} are obviously not available for experiments.

not uncommon. With six, 8-in. beam ports, one might then compute a total thermal-neutron flow into the beam ports of 2×10^{16} n/sec. This is remarkable performance since, as shown above, the maximum flow from the reactor is 3.3×10^{15} n/sec and one has not even taken into account the loss of neutrons to structural material and moderator in the core, the leakage to regions not occupied by beam ports or fast-neutron leakage. (In a light-water reactor, fast-neutron leakage may be in excess of ten times the thermal leakage.) Actually, what is being quoted is not the neutron flow into the beam ports, but rather the neutron flux which would be at the beam-port location if the beam port were not present. When the beam ports are in place, one finds a thermal-neutron current into the beam ports closer to 10^{12} n/cm²/sec rather than 10^{13} n/cm²/sec.

Using a Reflector

A reflector is sometimes placed between the core and the beam ports in research reactors designed primarily to provide neutrons for beam-port experiments. This region has apparently been included in existing designs under the mistaken impression that the flux level in the core is indicative of the neutron current supplied to the beam ports. The neutron current into a beam port is due to neutrons which have leaked from the core. Therefore, a reflector interposed between core and beam port will reduce the leakage into the beam port.*

In some reactors, there are a number of experimental facilities within the core and the question is now posed as to whether a reflector will increase the neutron current into the core experimental facilities. That this will be the case is not as obvious as appears at first. If a reflector is placed around a reactor core, the reflector will cause the fuel loading within the core to be reduced. This, in turn, will cause the thermal utilization within the fuel region to be reduced. Thus, the neutrons which are prevented from leaking out of the core by the reflector may not end up within the experimental facilities within the core, but rather may end up as absorptions within structural material or moderator in the fuel region. Under some circumstances, adding a reflector to a bare reactor core can result in a lower neutron current into in-core experimental facilities. A general investigation of this problem indicates that a reflector will be beneficial if there are enough neutron-absorbing experiments within the core to keep the fuel loading (and thus the thermal utilization within the fuel region) high. In this case, the neutrons which would have leaked from the core will instead leak into the in-core experiments. If the reflector causes the thermal utilization to drop significantly, neutrons are being wasted.

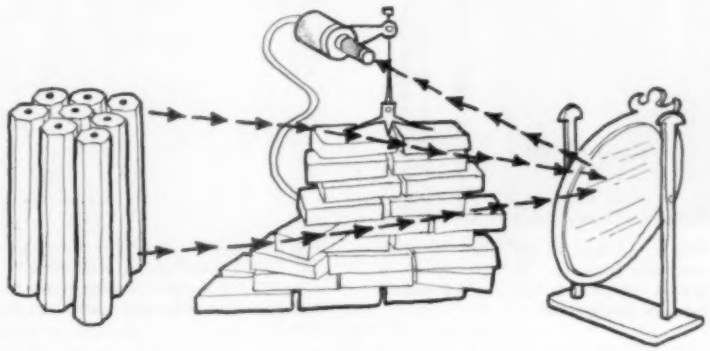
In particular, in the research reactors designed primarily for beam-port facilities, putting a reflector between beam port and core reduces the current into the beam ports and increases the absorption within the structural material and moderator.

In a test reactor of the ETR type where there are many facilities within the core and where the major leakage from the fuel region is into the core experimental facilities, the use of a reflector increases the current into the core facilities.

Certain reactor designs call for experimental space in the reflector region only. In such types (MTR is one example) the reflector material must absorb neutrons that would otherwise enter the experiments so that a beryllium, graphite or heavy water reflector may be justified. However, the total neutron current into the experiments would be no greater than for an efficiently designed water reflected reactor in which the experiments are located so that the water absorption is only a small fraction of the neutron leakage from the core. There is, however, a gain in terms of mechanical arrangement since the experiments can be separated by relatively large distances when a beryllium or heavy-water reflector is used since the reflector is not highly absorbing.

Similarly, large-size experiments benefit since a neutron is able to travel in the reflector to the region away from the core and then enter the experiment.

One caution should be observed in designing a reactor of this type. If the experiments are not properly located in the reflector region, the reflector will serve mainly to reflect neutrons back into the core causing a reduction of thermal utilization within the core. Therefore, even in the design of an MTR-type reactor, one must be sure that the use of an expensive nonabsorbing, reflector material actually results in greater current into the experiments.



The use of a reflector does not always increase the neutron flux available to experiments

Fuel Costs

We have shown that reactor efficiency is made high by placing enough fuel into the reactor to make the thermal utilization high. Thus an efficient reactor will have a relatively high fuel inventory. However, the major fuel costs incurred in test-reactor operation are fabrication and burnup costs; the inventory costs are comparatively insignificant. Hence, the fuel costs will vary inversely with the length of time the fuel elements can operate.

The core lifetime is determined, primarily, by the initial excess reactivity of the clean core and the loading of the core itself. Since changes in reactivity produced by burnup effects are inversely proportional to the fuel loading, for the same initial excess reactivity an efficient test reactor (one with a high fuel loading) will achieve a higher absolute burnup and hence a lower fuel cost.

* In some early swimming-pool reactors designed for 20%-enriched fuel the reduction in loading brought about by the reflector was important because metallurgical problems made fuel elements with high loadings difficult to fabricate.

This barrel . . .

FIG. 1. Actual 55-gal drum in which excursion occurred. Critical amount of uranyl nitrate solution was introduced through plastic tube

. . . went critical in this system . . .

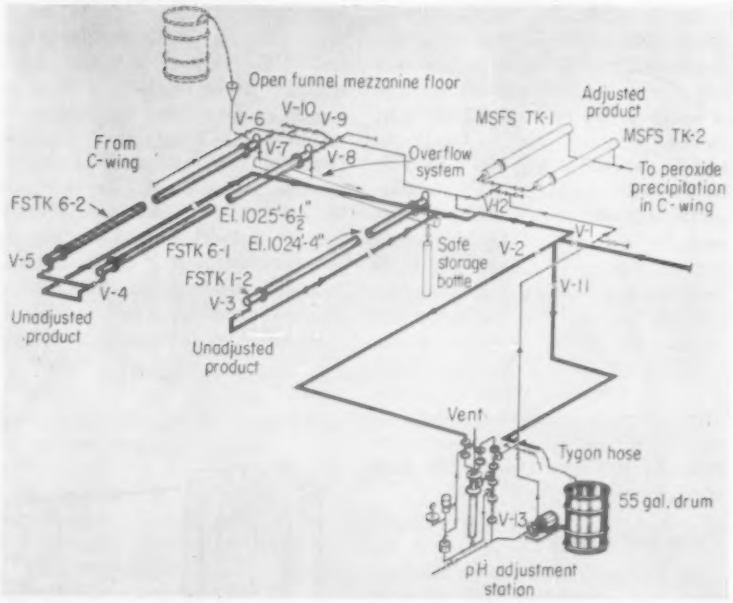


FIG. 2. Solution of 90%-enriched uranium was inadvertently introduced into "safe" tank FSTK 1-2 and piping connecting tanks 1-2, 6-1 and 6-2. Subsequently, 6-1 and 6-2 were filled with water through funnel for leak testing. When drain line was opened, enriched solution preceded water into drum

NUCLEONICS — Official Inquiry Reports on Nuclear Accidents

Oak Ridge Y-12 Accidental

Adjoining are extracts from the final report (Y-1234, Y-12 Plant, Union Carbide Nuclear Co.) of the committee appointed to investigate an accidental radiation excursion at the Y-12 Plant. This incident was described as "the first nuclear excursion to have occurred in a uranium processing facility."

Publication of this report reflects the intention of NUCLEONICS to publish such information when it is available. Reports of two earlier incidents —Windscale and M. W. Kellogg —appeared in the December, 1957, NUCLEONICS, p. 41. In this way, it is hoped to contribute to the understanding of the nuclear industry by relaying experience gained and by enlightening the public.

AN ACCIDENTAL nuclear excursion occurred in the Y-12 Plant at approximately 2:05 p.m. on Monday, June 16, 1958. The following remarks summarize information obtained by the committee appointed to investigate the accident:

1. The site of the accidental nuclear excursion was a 55-gallon stainless steel drum located in the C-1 Wing of Building 9212 [Figs. 1–3] . . . .

2. On the basis of the available data, the following sequence of events is postulated as leading to the incident: a portion of enriched (~90% U^{235}) uranium-bearing solution, containing approximately 50 gm U^{235}/liter, flowed through a valved pipeline from an extraction product "safe" tank in B-1 Wing into C-1 Wing and partially filled "safe" tank 1-2 as well as the piping connecting tanks 1-2, 6-1 and 6-2 [Fig. 2] . . . .

Subsequent to this inadvertent transfer, tanks 6-1 and 6-2 were partially filled with water for purposes of routine leak testing following the monthly inventory clean-out.

When the valve on the drain line leading to the drum shown in [Fig. 1] was opened, the enriched uranium solution in tank 1-2 and the connecting piping preceded the water from tanks 6-1 and 6-2 into the drum causing the incident.

3. Following the initial nuclear burst, which did not discharge the contents of the drum, the nuclear system appears to have oscillated. The reaction was ultimately stopped by the additional water flowing into the drum. Based upon an examination of the chart taken from a recording monitor located in another building and other indicative information, it is believed that the nuclear reaction lasted approximately twenty minutes.

4. Upon the sounding of the radiation monitor alarm siren, plant emergency procedures were put into effect.

By 5:00 p.m. of June 16, radiation survey teams established that the incident had in fact taken place in a drum located in C-1 Wing of Building 9212. At approximately 9:30 p.m., the drum was poisoned by the insertion of a cadmium scroll. Clean-up of all Building 9212 areas except C and C-1 Wings was begun during the night of June 16. During the night of June 17, a "safe" tankage facility was fabricated and installed in one of the Building 9212 shielded radiograph cells, and the contents of the drum were transferred to this improvised storage site during the afternoon of June 18. The empty drum was then transported to ORNL for analysis.

. . . Five men received medium radiation doses

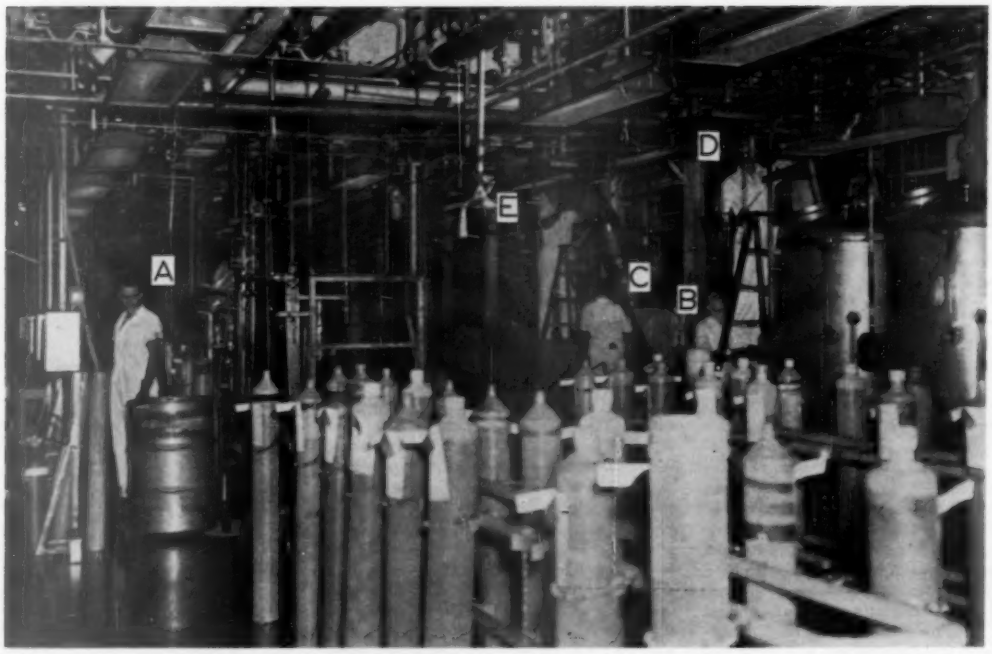


FIG. 3. Re-enactment of positions of employees receiving highest doses; employee A stood behind drum of reactant solution. Doses and distances from center of solution were: A—365 rad (461 rem), 6 ft; B—270 rad (341 rem), 15 ft; C—339 rad (428 rem), 17 ft; D—327 rad (413 rem), 16 ft; E—236 rad (298 rem), 22 ft

Excursion, June 16, 1958

Clean-up activities were continued, and by the morning of June 19, all recovery facilities with the exception of those in the central and east portion of C-1 Wing were put back in operation.

In the afternoon of June 20, a team consisting of members of the investigating committee, UCNC operations and development supervision moved into C-1 Wing and carried out a program of dismantling, sampling, inspection and hydraulic testing. As of June 23, after all available raw data had been gathered to the satisfaction of the investigating committee, all recovery facilities were returned to normal operations.

5. Eight Y-12 employees were in the vicinity of the drum at the time of the incident. Five men [were] exposed to what has been described as a medium dose of radiation by Dr. Marshall Brucer, Chairman, Medical Division, Oak Ridge Institute of Nuclear Studies. . . . The positions of these men are portrayed in [Fig. 3]. The other three men were exposed to [lower doses of 68.5 rad (86.5 rem), 68.5 rad and 22.8 rad (28.8 rem)].*

*. . . First collision total dose [is] in rads and estimated RBE dose in rem, with an assumed RBE = 2 for fast-neutron dose.

Following the accident, these men were hospitalized at the Oak Ridge Institute of Nuclear Studies where specialized medical attention was provided. The employees [receiving the low doses] were released from the hospital on June 26, 1958, and allowed to resume their normal activities. [The other five] were released on July 30, 1958.

6. The neutron and gamma radiation of personnel whose indium foil badges indicated significant exposure was determined by measuring the Na^{24} in the bodies of those exposed. This was done in two ways: (a) by counting blood samples, and (b) by counting the total body in a whole body counter. The neutron and gamma doses measured in a mock-up of the excursion, carried out in the ORNL Critical Experiments Laboratory on June 18, provided necessary data to which the Na^{24} values could be related. . . .

7. Although it is unlikely that any future accidental nuclear excursion would exactly duplicate the incident sustained at the Y-12 Plant, there are certain aspects which would be common to all incidents. . . .

Findings

Causes of the incident. It is believed that this accident was caused by a number of interdependent contributing circumstances. Although of uneven weight, no single happening can be said to be a principal contributor. . . .

1. The process phase in which the accident occurred was a temporary arrangement encompassing portions of a new installation in the startup stage (B-1 Wing), and an old installation in the shutdown stage (C-1 and C Wings). This arrangement was necessitated by delays in the activation of new facilities in B-1 Wing for the conversion of uranyl nitrate solution to uranium tetrafluoride.

This temporary arrangement of old facilities combined with part of a new installation was a compromise between the customary detailed design planning of valving, instrumentation, and other safeguards, and a requirement for maintaining production during this interim phase. Also, the responsibility for the uranyl nitrate to uranium tetrafluoride operation was thereby split among three different supervisors in three physically separated areas, instead of being under a single supervisor as would be the case in the completed B-1 Wing. Communications were considerably complicated by this situation.

2. At the time of the incident the uranium

processing areas had been concerned with the required monthly accounting of uranium in inventory, which necessitated a stoppage of operations. However, all operations were not stopped or started at the same time due to the complexity of the installation. The method of taking inventory varied with the form and concentration of the uranium. For example, where equipment contained dilute homogeneous solutions of uranium, a satisfactory accounting could be made by taking samples and computing the contents of known volumes.

In the process phase wherein the accident occurred, because of the high concentration of the uranium and the tendencies of the solutions to deposit uranium-bearing solids, more precise accounting is obtained by processing the contents of the 5-in.-diameter "safe" geometry tanks to uranium tetrafluoride just prior to the inventory period. In addition, it was recognized procedure to wash, dismantle and swab out these 5-in.-diameter "safe" tanks, collecting the washings in portable plastic "safe" bottles. . . .

As reassembled "safe" tanks were prone to leak at the tank ends when placed back in service after the monthly inventory cleanup, leak testing of reassembled tanks by filling with water, checking and draining prior to their return to operation, was practiced. Leak testing with water was among the . . . routine duties that were not formalized and were carried out under the discretion and supervision of the process foremen.

Although this leak testing had considerable utility, as practiced it deviated from the intent of two mandatory area procedural rules by the incorporation of a 55-gallon drum to collect water drained from "safe" tanks after the leak testing. These rules are:

(a) Process liquids are never to be transferred from a geometrically "safe" container to a geometrically "unsafe" container.

(b) "Unsafe" containers used to collect dilute liquids (such as mop water) must contain a charge of cadmium nitrate (a nuclear poison).

An unfortunate interpretation of the above rules was that they did not apply to the leak testing of the 5-in.-diameter "safe" tanks, since the tanks were clean and only water was used in the operation.

The significance of the foregoing, with regard to the accident, is that it furnished the mechanism whereby an "unsafe" geometry container (i.e., the 55-gallon drum) was separated from concentrated uranyl nitrate solutions by only a single valve (V-1).

3. The dismantling, cleaning, reassembly, and subsequent leak testing of the C-1 Wing "safe" tanks involved a number of different employees, including both maintenance personnel and chemical operators, and usually required several eight-hour shifts for completion. Under these circumstances, it is evident that good communications were necessary.

The leak testing practice included the following pertinent routine safeguards:

(a) The process foreman in charge assures himself, by reference to the operating log and by discussion with the preceding shift foreman, that the tanks to be tested have actually been disassembled, cleaned, and reassembled.

(b) The process foreman, either personally or through instructions to his operators, checks all valves connecting the tanks to be tested with other process areas and determines that their position is correct. In addition, the pneumatic liquid level indicators are checked to determine that the tanks are empty.

(c) During the draining of the leak test water from the "safe" tanks into a container (i.e., in this case a 55-gallon drum), an operator is stationed adjacent to the container to observe the flow of water, and safeguard against any unusual development. . . .

Early during the shift preceding the accident (11:00 p.m. Sunday, June 15, to 7:00 a.m. Monday, June 16), the process foreman (Foreman "Y") in charge of C-1 Wing noted that solution (wash water) was present in the 6-in. glass standpipe of the C-1 Wing *p*H adjustment station and directed one of the chemical operators to drain this liquid. At 5:00 a.m. Foreman "Y" again noted liquid in the glass standpipe and questioned the forementioned operator as to whether his previous order had been carried out. This operator stated that the standpipe had been drained. Upon investigation, Foreman "Y" found that solution was slowly leaking through valve V-2. Foreman "Y" tightened this valve, stopping the leak. . . . Foreman "Y" was aware at the time that the B-1 Wing secondary extraction systems were in operation producing uranyl nitrate product, but believed that the leak testing of the 6-1, 6-2, and 1-2 tanks had been completed on the previous Friday.

The closing of valve V-2 allowed the uranyl nitrate solution, which had been leaking into the *p*H adjustment station standpipe, to back up into the C-1 Wing "safe" geometry storage tanks. . . .

At 7:00 a.m., June 16, Foreman "X" relieved Foreman "Y." The accounts of whether Foreman "Y" notified Foreman "X" of the above mentioned uranyl nitrate leakage are conflicting. In any event, no mention was made of it in the operating log.

At 8:00 a.m., Foreman "W" came on duty. One of his jobs was to complete the leak testing of the C-1 "safe" tanks including tanks 6-1, 6-2, and 1-2. He assigned Operators "A" and "J" to this work. Foreman "W" was completely unaware of the circumstances of the uranyl nitrate leakage observed on the previous shift. He was, however, quite certain that the "safe" tanks 6-1, 6-2, and 1-2 had been dismantled and cleaned during the previous week and that no operations had been started in C-1 Wing since that time. This information had been logged and had also been given him on the preceding Friday by Foreman "U."

On the basis of this previous knowledge, Foreman "W" did not deem it necessary to check the tank level indicating panel nor did he attach any significance to the open or closed condition of valve V-3 at the bottom of tank 1-2 during his piping check. Being aware of the fact that B-1 Wing was in operation, he did, however, instruct Operator "J" to check valve V-1 in the line from B-1 Wing. Furthermore, Operator "A" was stationed at the 55-gallon drum during the "safe" tank draining operation.

Subsequent investigation indicated that valve V-3 at the bottom of tank 1-2 was open and that this tank contained a substantial quantity of concentrated uranyl nitrate solution. This solution had leaked from B-1 Wing through valve V-1 between Sunday night and 1:30 p.m. Monday when Operator "J" checked valve V-1 and applied pressure to the handle to assure positive closure.

4. Shortly before 2:00 p.m., the leak testing of tanks 6-2 and 6-1 having been performed by Operators "A" and "J," Operator "J" opened drain valve V-11 to empty these tanks into the 55-gallon drum and temporarily left the C-1 area. Operator "A" remained by the drum. At 2:05 p.m., an accidental nuclear excursion took place in the drum. Subsequent investigation has established the following facts:

(a) The excursion took place after the concentrated solution in the drum had reached a height of 9 inches.

(b) It appears that this solution came from tank 1-2 into which it had previously flowed from B-1 Wing. This was indicated by hydraulic tests. . . . which showed that liquid drains from tank 1-2 in preference to liquid in tanks 6-1 and 6-2; it was supported by chemical analysis . . . which showed the liquid in tanks 6-1 and 6-2 to have contained a negligible amount of uranium while a sample of residual solution removed from tank 1-2 contained approximately 35 g U^{235}/liter.

(c) The leak test water from tanks 6-1 and 6-2 followed the concentrated solution from tank 1-2 into the drum and approximately twenty minutes after the beginning of the excursion, when the level in the drum had reached a height of 14 to 16 inches, this additional water caused the nuclear reaction to subside.

5. Operator "A," an experienced man (one year of college training, six years in uranium processing operations), was adjacent to the 55-gallon drum observing the slow flow of liquid. The previously mentioned hydraulic experiments, performed after the accident, established that approximately a quarter of an hour was required for the liquid in the drum to reach the level at which it became critical. In addition, the yellow color of concentrated uranyl nitrate is distinctive and was well known to Operator "A." It would thus appear that Operator "A" had an opportunity to shut off the flow of solution prior to the accident.

Radiation alarm system. The utility of radiation detection instruments can be summarized by stating that they are important after an accident in indicating the radiation hazard then prevailing, but in general, they have no value in predicting that a nuclear excursion is imminent.

There were six radiation alarm monitors in the general area of Building 9212 which encompassed the site of the accident. These monitors actuated alarm sirens when the dose rate at the instrument exceeded 3 mr per hour. However, in tests subsequent to the accident, it was determined that a period of 3 to 5 seconds was required, after actuation of the radiation monitors,

Continued on p. 200

Production Reactors, A.E.C., Savannah River, S. C. Continuous loadings.

Enrico Fermi Atomic Power Plant (PRDC), Monroe, Mich. Complete core loading with blanket elements.

Brookhaven Gas-Cooled Research Reactor, Upton, N. Y. Complete reloading and spares.

Chalk River Pool Test Reactor Chalk River, Ontario, Canada. Complete core loading and spares.

MIT Reactor, CP-5 Type, Cambridge, Mass. Complete core loading and special test elements.

Curtiss-Wright Pool Reactor, Quehanna, Pa. Complete core loading and spares. (According to Curtiss-Wright design and specifications.)

Army Package Power Reactor, Corps of Engineers, Ft. Belvoir, Va. Complete dummy core loading.

Brookhaven Medical Reactor, Upton, N. Y. Complete core loading.

Brookhaven Neutron Source Reactor, Upton, N. Y. Complete core loading.

Netherlands RCN Test Reactor, Petten, The Netherlands. Complete core loading and spares.

McMasters University Pool Reactor, Hamilton, Ontario, Canada. Complete core loading and spares.

Industrial Radiation Laboratory Pool Reactor (IRL), Princeton, N. J. Complete core loading and spares.

Belgium Materials and Engineering Test Reactor (BR-2), Mol, Belgium. Complete core and critical loadings.

NDA Pawling Research and Test Reactor, Pawling, N. Y. Complete core loading.

Penn State Reactor, State College, Pa. Complete core loading.

Brookhaven Water Moderated Critical Facility, Upton, N. Y. Complete core loading.

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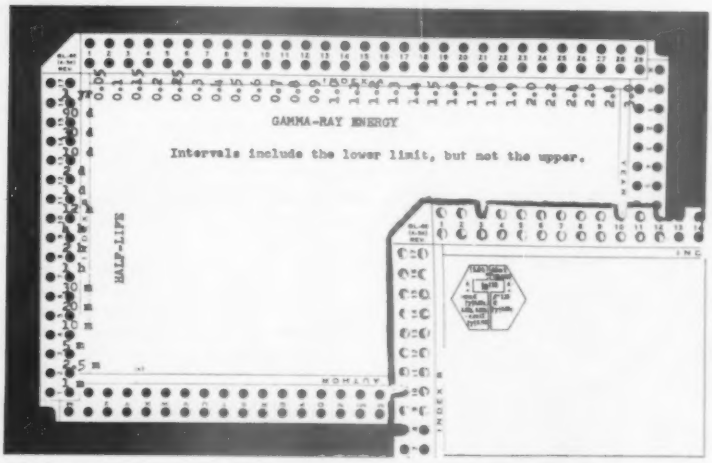

INDEX CARD and typical card for specific isotope. Index card indicates γ-ray energy and half-life scales along top and left edges of cards. At bottom right is corner of card for In^{110} with holes punched for energies and half-lives. Hexagon containing nuclear data was cut from "Trilinear Chart of Nuclides"

KEYSORT-CARD FILE of nuclear data. Cards of desired γ-ray energy and half-life are selected by inserting metal rod in appropriate hole and shaking them out

Keysort Cards for Nuclear Data

By JOHN P. NEISSEL
General Engineering Laboratory
General Electric Company, Schenectady, New York

In work such as activation analysis, it is necessary to identify radioisotopes from half-life and γ-ray energy. Some tables are available (*1–5*) that are partial listings of γ-emitters by energy and of isotopes by half-life. There is also an IBM-type card file (*6*) that is out of date, no longer available and not well suited to γ-ray spectroscopy. We use a keysort-card system that is simple to prepare and to use.

The card file and cards are shown in the illustrations. The cards are 5 × 8 in. To record data, the holes around the edges are punched through to the edge, allowing the cards of interest to fall out when the group is lifted by a steel rod inserted through the holes. Sorting by more than two properties is possible, and systems of punching other than by intervals of a variable can be used (*7*).

One card is used for each of the ~1,200 isotopes. The data for each isotope were obtained by cutting up a copy of the "Trilinear Chart of the Nuclides" (*8*) and gluing the individual hexagons to the cards.

Isomeric states of a nuclide are on the same hexagon and hence on a single card. In these cases the two or more half-lives are punched along the left edge and all of the gamma energies are punched along the top. Because of the multiple punching, some combinations of half-life and γ-ray energy that do not exist may fall out during the selection process. They can be eliminated by examining the decay data on the cards.

Frequently, one detects the γ-ray of a short half-life daughter of a long half-life parent—the half-life measured is that of the parent. For this reason, the card of such a daughter is punched with its and the parent's half-lives. These mother-daughter relationships, as well as elemental cross section and fission-yield values, atomic number, and position relative to line of stability, are lost in cutting up the chart. It is therefore advisable to obtain two copies of the chart.

The index card (illustrated), which belongs at the front of the file, often is lost somewhere in the middle. To facilitate finding it, the hole in the upper right-hand corner of the index card is punched out. Also, we file all isotopes of atomic weight less than 181 in one drawer and those over 181 in another. To separate them, the top hole along the right edge (not the corner hole) is punched out of the cards that go in the second drawer.

In using the file, all cards of the desired gamma energy are first removed by passing the sorting rod through the proper hole, allowing them to fall out. The resulting stack is then subdivided using the proper half-life hole. A few vertical shakes of the rod usually free all of the cards that are to fall out. To free any that might stick, the rod is rotated back and forth about a vertical axis.

The cost of materials for this system is estimated as about $91. Time involved is about one week each for an engineer and an assistant.

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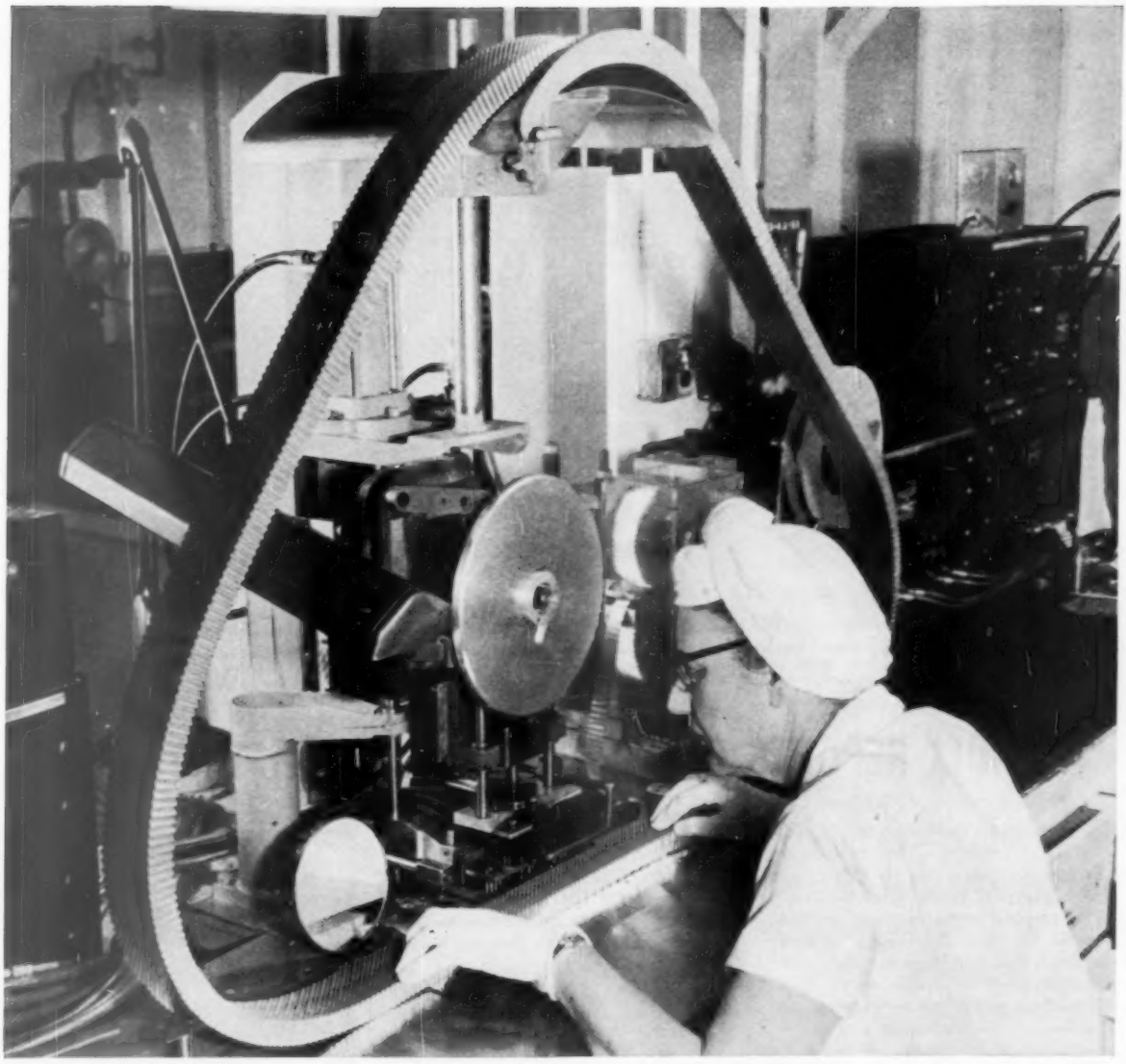

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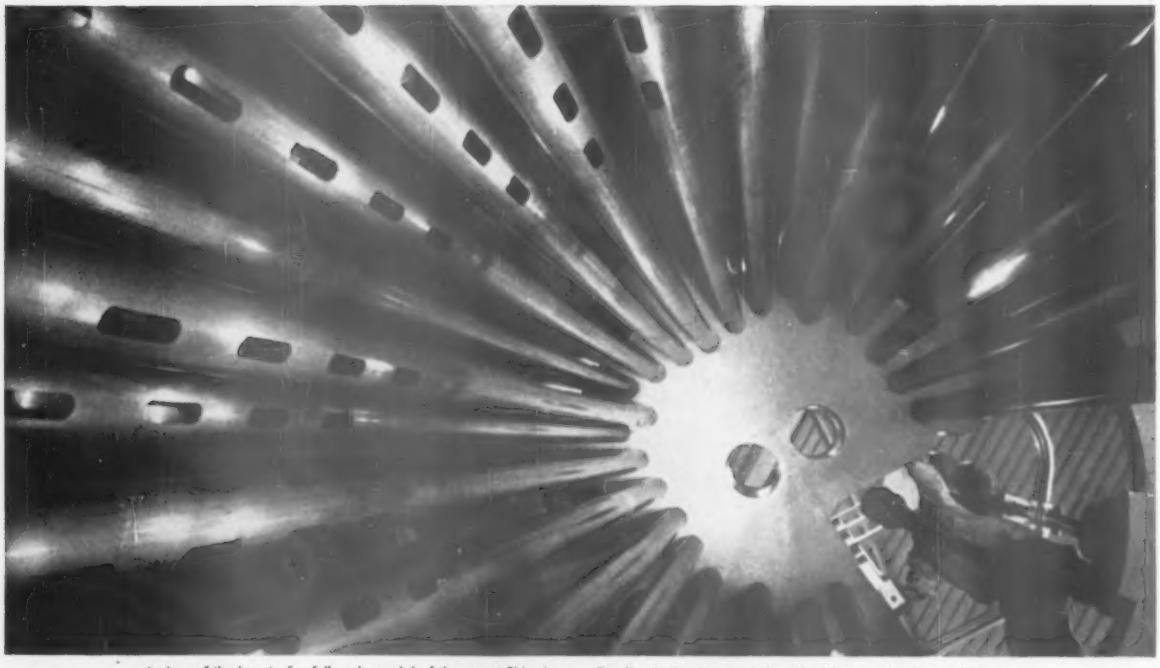

A view of the heart of a full-scale model of the great Shippingport nuclear power reactor at Pittsburgh. The Westinghouse Electric Corp. designed and developed its nuclear portion. Bendix built the control rod drive mechanisms which are located inside the tubes shown above. Reactor control rods are used to control the atom splitting, heat producing process.

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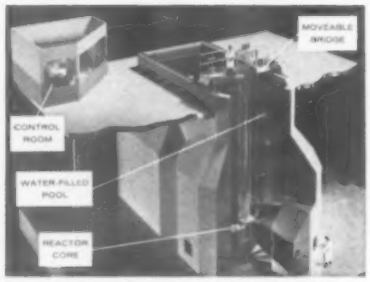
We are manufacturing control rod drive mechanisms for the prototype of the nuclear propulsion plant for the Navy's nuclear-powered surface ship being built at the U. S. Atomic Energy Commission's naval reactor facility in Idaho; also for the Navy's first nuclear-powered guided-missile-firing cruiser *USS Long Beach* and for several nuclear-powered submarines. These developments are directed by the Naval Reactors Branch of the AEC. In addition we are developing the control rod mechanisms for an AEC nuclear-powered rocket project.

We are also supplying the new nuclear-powered U. S. Navy destroyer with transistorized nuclear instrumentation.

We are building a nuclear research reactor, somewhat similar to the model pictured on the right, for the Atomic Energy Commission for use in connection with the nuclear aircraft propulsion project. We are also performing radiation damage tests for the Air Force.

We are supplying transistorized nuclear instrumentation to the Army Package Power Reactor at Fort Belvoir. This project deals with reactors to supply all power requirements in remote locations such as the Arctic where fuel is lacking.

We have developed a new type "cut-off switch" for the large research reactor being built for the new National Aeronautics and Space Agency. Transistorized for reliability, it will warn of any abnormal condition and automatically shut down the reactor, if safety requires it.



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Neutron Spectra from Mock-Fission Sources

By E. TOCHILIN and R. V. ALVES
U. S. Naval Radiological Defense Laboratory, San Francisco, California

Mock-fission-neutron sources containing Po as the alpha emitter and a mixture of boron, beryllium, fluorine and lithium are now available in three mixes as calibration standards for fission-type spectra.* The table lists their compositions and average yields. The primary difference among the three mixes is the relative amount of boron and fluorine used. Lithium, with its low (α,n) cross section, contributes little to the final spectrum; introduced in the form of LiF salt, it serves primarily as a carrier for fluorine.

Spectra for (α,n) neutrons from these elements have been calculated and compared with experimental values by W. Hess (*1*). Results of these calculations appear in Fig. 1, together with a tabulation of neutron yields (*2*). Except where noted, all spectra are normalized to unit area. The spectrum for Be(α,n) neutrons extends beyond the limits of the graph to a maximum energy of 11 Mev. The average energies agree with the values given by Mound Laboratory, viz., Be, 4.5 Mev; B, 2.3 Mev; F, 1.2 Mev; and Li, 0.3 Mev.

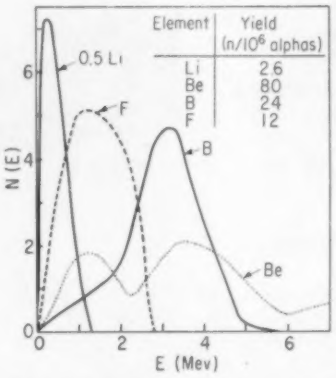

FIG. 1. Theoretical neutron spectra and yields from Po alphas and thick Li, Be, B and F targets

Hess has also compiled the published experimental spectra for Po-Be, Ra-Be and Po-B sources. Agreement among experimental measurements was, in general, poor. This lack of agreement is, in part, explained by the fact that Po neutron sources must be prepared by mechanical mixing. The finite size of the Po particles, together with the lack of perfect mixing, result in sources whose neutron spectra and yields are not completely reproducible. For this reason it is not surprising that calculated spectra do not agree with experimental measurements except in a very general manner.

In contrast, there is good agreement between the calculated and experimental spectra of Pu-Be neutrons (*3*). Plutonium can be alloyed with Be, which allows for uniform and reproducible mixing.

We have measured the neutron spec-

* Manufactured by Mound Laboratory, Monsanto Chemical Co., Miamisburg, Ohio.

Composition and Average Yield of Mock Fission Mixes

Mix	Element	Composition Wt %	Neutrons per $10^6\alpha$	Per cent neutrons	n/sec per curie
A	Be	0.3	0.28	2.8	3.8×10^5
	B	9.4	2.28	22.4	
	F	66.2	6.72	66.0	
	Li	24.1	0.90	8.8	
B	Be	0.3	0.28	2.6	4.1×10^5
	B	15.0	3.62	33.0	
	F	62.1	6.24	56.8	
	Li	22.6	0.84	7.6	
C	Be	0.3	0.28	2.4	4.4×10^5
	B	20.0	4.82	41.0	
	F	58.5	5.87	49.9	
	Li	21.2	0.79	6.7	

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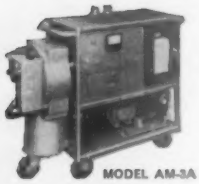

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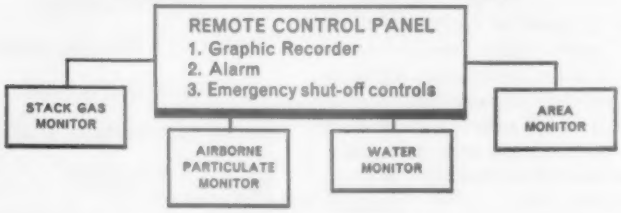

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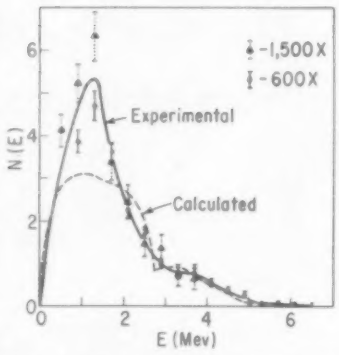

FIG. 2. Comparison of experimental and calculated mock-fission spectra (mix A)

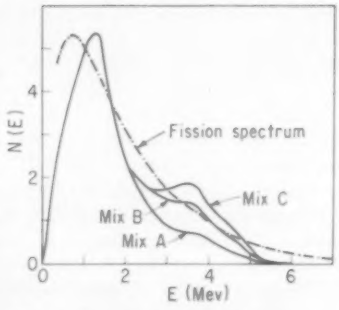

FIG. 3. Comparison of fission-neutron spectrum with mock-fission mixes A (measured) and B and C (calculated from measurement of A)

trum from a mix A mock-fission source by means of recoil-proton tracks in Ilford C-2 200-μ plates over a neutron energy range of 0.4–7 Mev. The plates were processed and analyzed according to the procedures described by Allred and Armstrong (*4*). Tracks were measured at 600 and 1,500 power and normalized. These data are presented in Fig. 2, together with the spectrum calculated by Hess from the data shown in Fig. 1. For energies greater than 3 Mev, where neutrons from B and Be predominate, the agreement is good. However, the experimental data show considerably greater peaking in the fluorine region of 1.3 Mev. One earlier measurement by Richards with a Po-BF_3 source also showed a similar peaking (*5*).

Figure 3 shows the calculated neutron spectra for mixes B and C based on the data obtained with mix A. The relative increase in boron content in both B and C is responsible for accentu-

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ating the neutron population in the 2–5-Mev region. The primary fission-neutron spectrum determined by Watt is shown for comparison (*6*). Although there is general agreement in the low-energy region, there is clearly a lack of high-energy neutrons above 5 Mev.

Figure 4 is a semi-log plot of the B(α,n) and Be(α,n) spectrum of Hess with relative yields based on the ratios present in a mix A source. When the Be component is increased by a factor of 10, the composite spectrum above

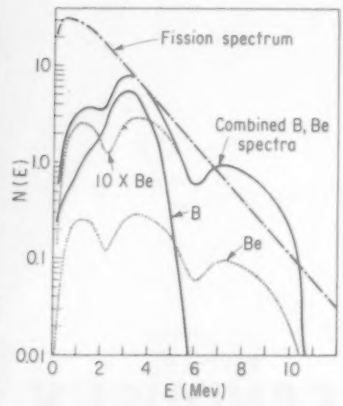

FIG. 4. Comparison of fission-neutron spectrum with B and Be components of mock-fission source

4 Mev better approximates fission neutrons.

On this basis, it is concluded that the spectral match with primary fission neutrons can be extended to energies of 10 Mev if the Be component is increased in the manner indicated.

The foregoing discussion has been restricted to primary fission neutrons. However, neutrons obtained even from fast reactors have lower energies because of inelastic scattering within the uranium mass. Thus, there is no such thing as a typical fission-neutron spectrum, and no single calibration source can be adequate for all conditions. However, mock-fission sources can serve as valuable basic standards.

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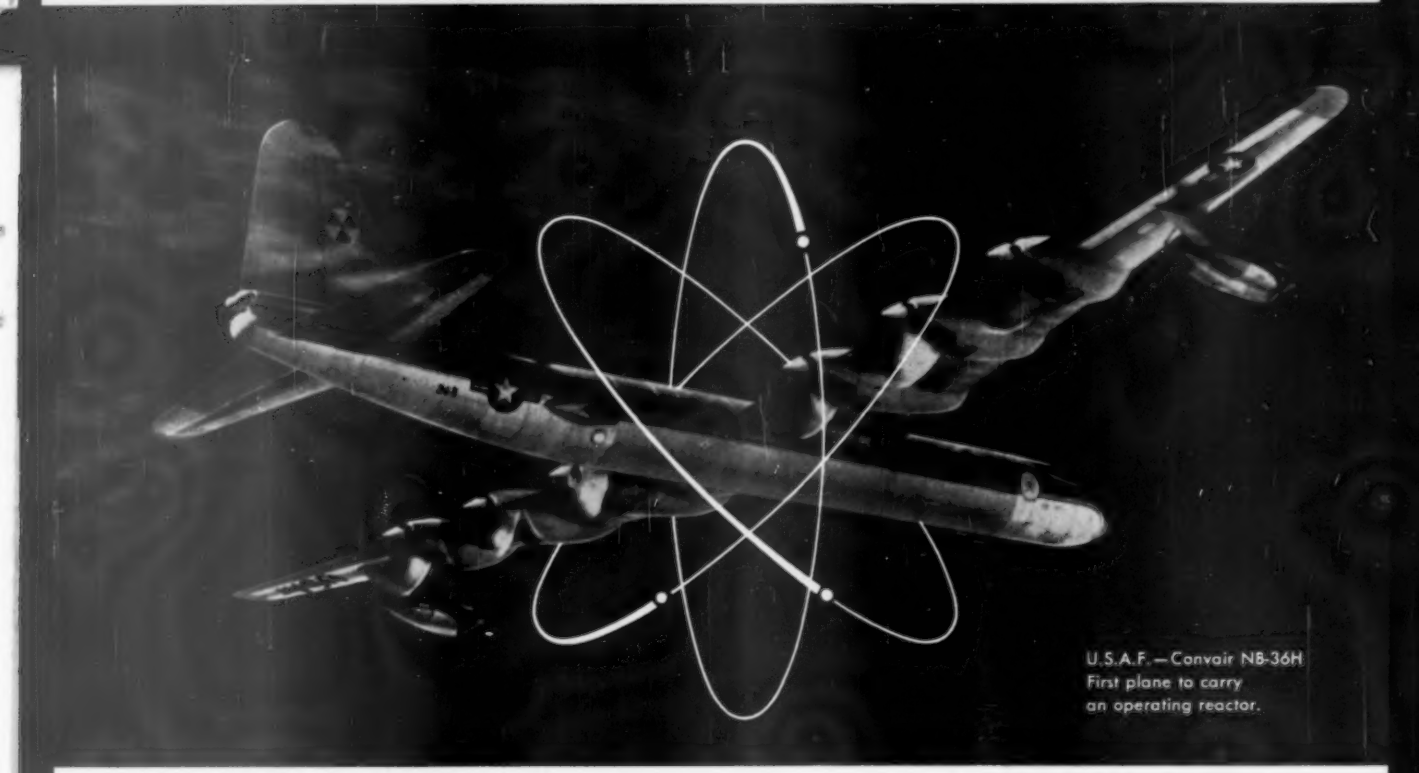

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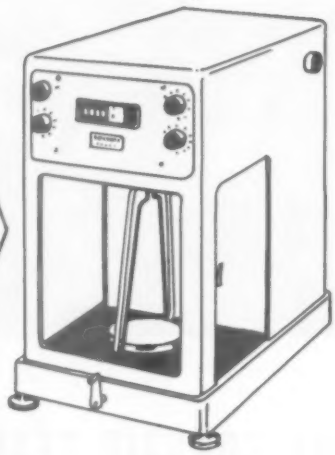

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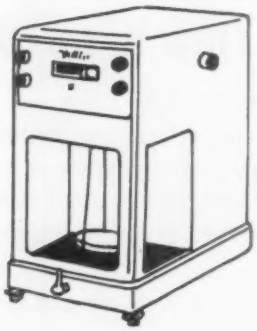

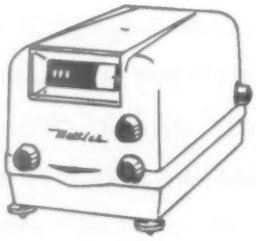

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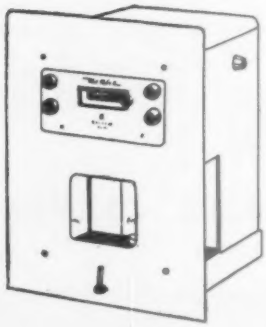

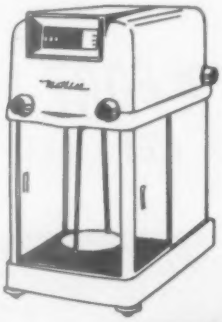

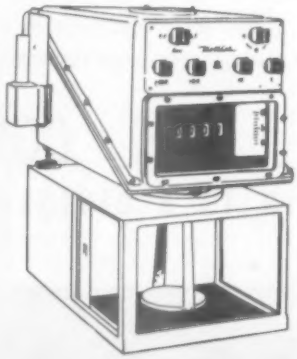

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Energy Discrimination in Gamma-Dose Evaluation

By L. F. KOCHER
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Two methods that can be used to evaluate gamma doses measured with multiple-shield film dosimeters are (a) simultaneous equations in the case of X- and γ-ray exposures of known energies and (b) constant-density curves in the case of multiple-energy exposures. Some examples are given here of the application of these methods to energy-discrimination studies with Du Pont 502 film packets.

Procedures

Badges were exposed to radiation from a "*K*" source (*1, 2*)* for energies of 16.1–78 kev. Filtered X-rays provided 120- and 170-kev exposures, and a Van de Graaff the 1,000-kev exposures. A free air chamber was used to measure the dose for each calibration.

All of the film was developed at the same time to eliminate variations in development and processing. Film from the same lot was used to avoid variations in the characteristic curves. A Beckman densitometer was used to measure the film densities.

Film Energy Dependence

Film response is strongly dependent on the radiation energy up to about 300 kev (*3*). Over 300 kev, the film is much less sensitive to energy.

In cases where radiation energies are greater than 300 kev, dose can be determined by preparing a dose-vs-density calibration chart from a high-energy source, such as Co^{60} or radium. It can be assumed that film response is about the same for all energies in this range. In cases involving energies less than 300 kev or a mixture of energies both greater and less than 300 kev, doses can be determined with simultaneous equations or constant-density curves, as described in the following discussion.

Simultaneous Equations

If the radiation to be measured consists of n distinct energies, the following system of equations describes the film densities behind the N different shields of the badge.

Let D represent the film density behind shield 1, and denote the energies by 1, 2, . . . , n. With one shield as a base for the equations, the coefficients of density in the $N - 1$ other equations are multiplicative constants relating each equation to the base equation, provided the film response relation is constant in the range considered. Although the coefficients can be determined at a specific point, they are otherwise variables themselves. The N equations are

$$D_1 + D_2 + D_3 + \cdots D_n = D_{\text{total shield 1}}$$
$$a_1D_1 + a_2D_2 + a_3D_3 + \cdots a_nD_n = D_{\text{total shield 2}}$$
$$k_1D_1 + k_2D_2 + k_3D_3 + \cdots k_nD_n = D_{\text{total shield } N}$$

By determining the coefficients experimentally, the density contribution of the n energies in any one of the N shields can be determined by solution of these equations.

At Hanford, there is a need to determine the dose at three narrow ranges of gamma radiations having mean energies of 16, 58 and 600 kev, which appear singly or in combination. The shields utilized are the open window, thin silver and thick silver (*4*). For this case, the equations can be reduced to

$$D_{16} + D_{58} + D_{600} = D_{\text{total open window}}$$
$$a_{16}D_{16} + a_{58}D_{58} + a_{600}D_{600} = D_{\text{total thick Ag}}$$
$$b_{16}D_{16} + b_{58}D_{58} + b_{600}D_{600} = D_{\text{total thin Ag}}$$

where the D's are open-window densities. Constants a_{16}, a_{58} and b_{16} were shown by experiment to be essentially zero; a_{600} and b_{600} are essentially unity. The equations then simplify to

$$D_{16} + D_{58} + D_{600} = D_{\text{total open window}}$$
$$D_{600} = D_{\text{total thick Ag}}$$
$$b_{58}D_{58} + D_{600} = D_{\text{total thin Ag}}$$

or the two equations

$$D_{16} + D_{58} = D_{\text{total open window}} - D_{\text{total thick Ag}}$$
$$b_{58}D_{58} = D_{\text{total thin Ag}} - D_{\text{total thick Ag}}$$

(*Continued on page 153*)

* In a "K" source, a metal filter suppresses low-energy radiation more strongly than the higher energies, except at the K-absorption edge.

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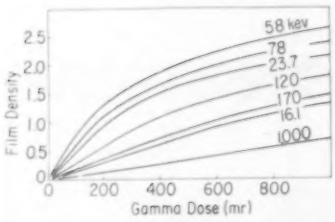


FIG. 1. Energy sensitivity of Du Pont 502 film behind 0.0191-in. Al absorber

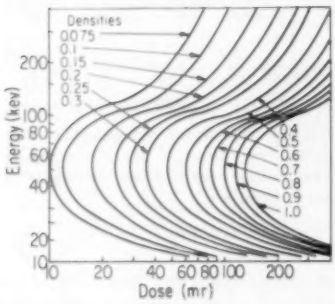


FIG. 2. Constant-density curves for 0.0191-in. Al

Data Handling

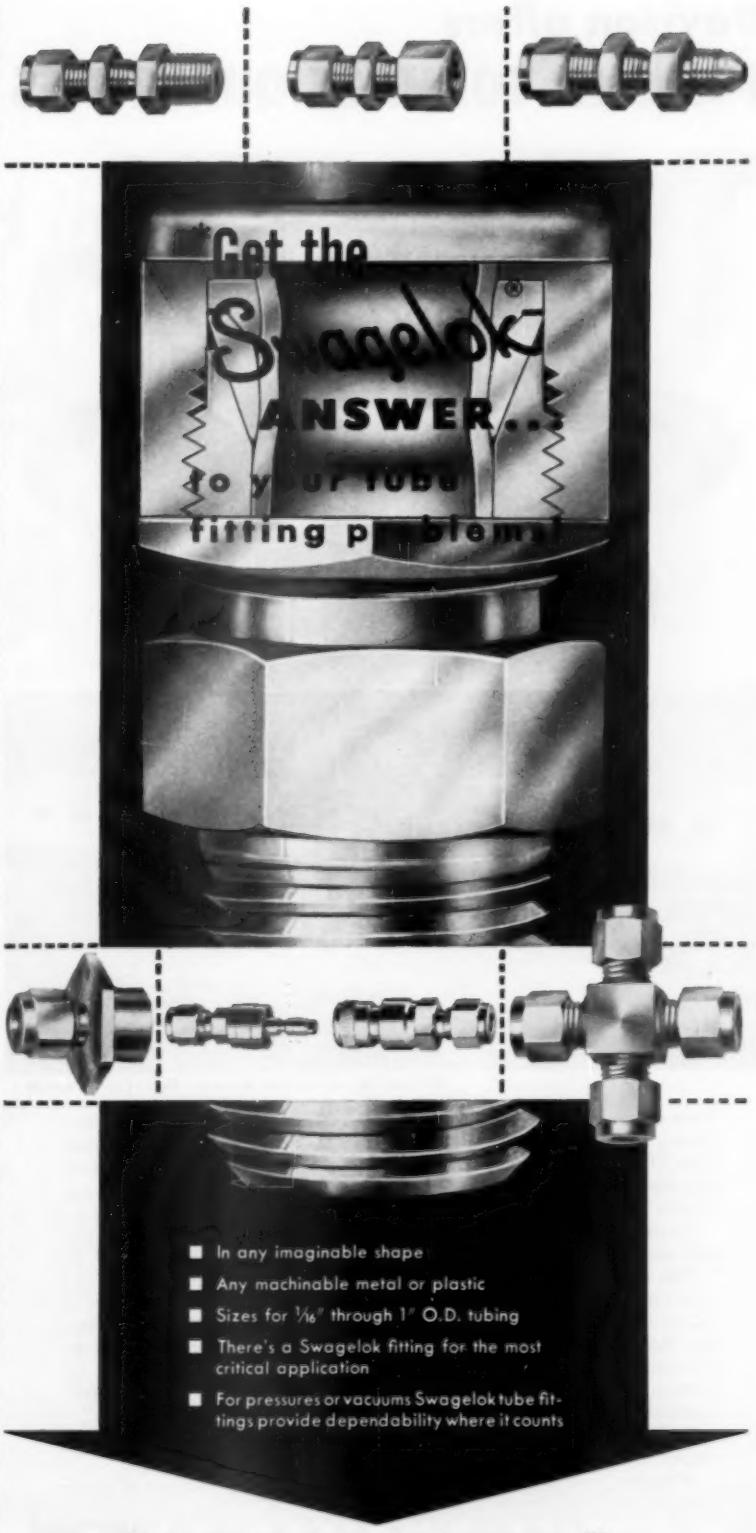
At Hanford, an IBM 702 calculator is used for all dose calculation and exposure record keeping (*5*). Calibrated film is prepared for 58-kev open window, 58-kev thin-Ag shield and 16-kev open window; these films provide the densities for low-energy doses. For high-energy doses, calibrated film is prepared for the thick-Ag shield, and regular dosimetry is performed.

In the case of 58-kev radiation, the doses are 0, 20 and in increments of 10 to 80 mr. In the case of 16 kev, the doses are 0, 40 and in increments of 20 to 160 mr. The choice is limited to the linear portion of the calibration curves. (For doses exceeding the linear portion of the curve, the machine prints out information to be used for manual estimation of the dose.) These data are then entered into the 702 where, by the method of least squares, linear equations are determined.

Constant-Density Curves

In estimating the dose from a single- or multiple-gamma source, the following graphical method can be applied.

From plots of dose versus density for a number of energies and a number of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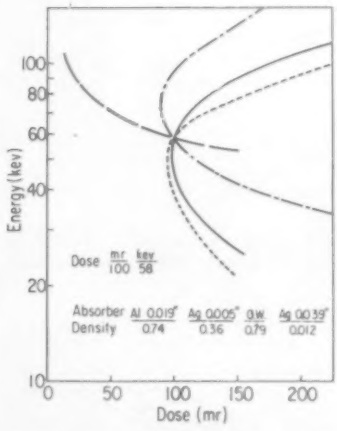

FIG. 3. Intersection of constant-density curves for several absorbers shows energy and dose (100 mr, 58 kev) of a given exposure

absorber thicknesses (e.g., Fig. 1), a family of constant-density curves can be plotted (e.g., Fig. 2).

To approximate the dose and energy of a monoenergetic gamma source, densities are obtained for a set of absorbers. A corresponding constant-density curve is then taken from a plot such as Fig. 2 for each absorber and plotted as in Fig. 3. The intersection of the curves indicates dose and energy.

To evaluate a mixed-energy dose from one or more high energies greater than 300 kev and a low energy less than 100 kev, the following set of shields can be used: (a) one shield to absorb essentially all energies up to 100 kev; (b) open-window region; (c) several shields that will not absorb the low energy to be measured. The density under the first shield is caused by the high energies and is approximately equal to the high-energy contributions to the densities under the other shields and the open window. Thus, after subtracting this density, the remaining densities can be treated as though produced by monoenergetic radiation (Fig. 4). This system can be extended to evaluating the dose from known multiple energies by the proper selection of additional absorbers.

The dose from unknown multiple energies can be evaluated directly from the constant-density curves. For this type of evaluation, the absorbers must allow unequal quantities of each energy

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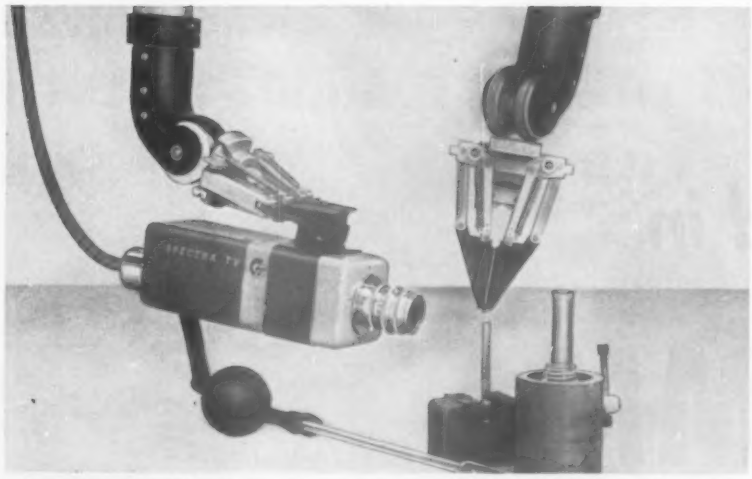

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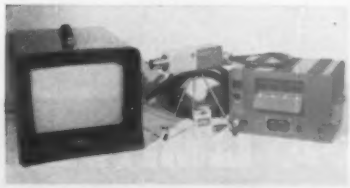

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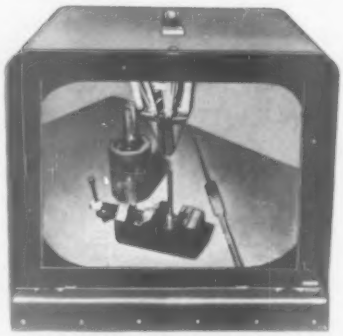

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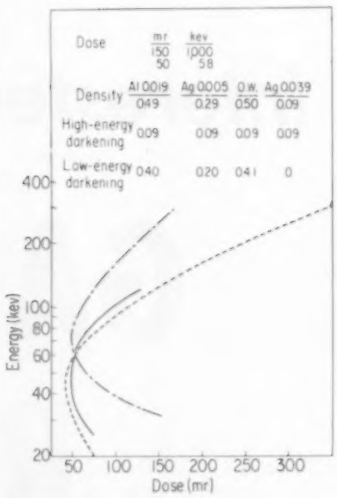

FIG. 4. Energy and dose determination for mixed high and low energies (150 mr for high energy determined from calibration curve)

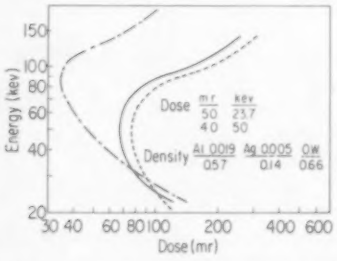

FIG. 5. Energy and dose determination for mixed unknown energies. Dose is determined by interpolation in triangle formed by curves

to pass through. If a plot of the constant-density curves is made for the given densities from each absorber, the curves do not intersect at a common point (Fig. 5). An enclosed area approximating a triangle is formed from this plot. The dose is interpolated from the triangle.

* * *

The author wishes to express his sincere thanks for the assistance in the mathematical treatment of the simultaneous-equation method by I. C. Nelson and E. C. Watson, both of HAPO.

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5. I. C. Nelson, Hanford Atomic Products Operation, private communication

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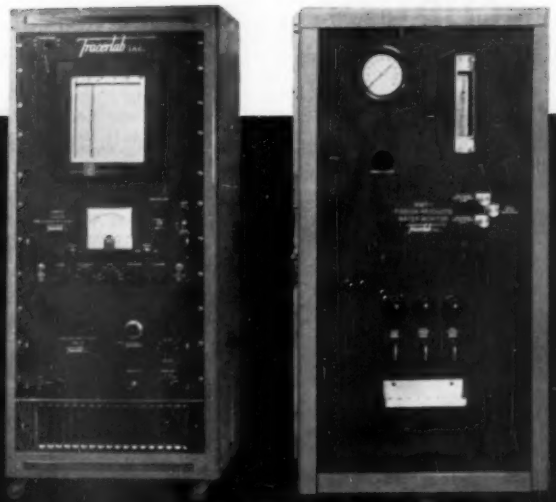

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NUCLEAR ENGINEERING NOTES

LMFR Variation Proves Wanting

A variation on the Liquid Metal Fuel Reactor concept (NU, July '54, p. 11) would have a core of static liquid-metal fuel cooled by an independent liquid-metal or gas coolant circuit. This arrangement, as compared with the standard LMFR (in which the heat is removed by circulating the liquid-metal fuel to an external heat exchanger), would have the advantages of a lower fuel inventory, fewer, if any, fission products and delayed neutrons in the primary circuit, and the possibility of a more efficient distribution of fertile material. In a recent study (BAW-1045) Babcock and Wilcox found that these positive features of the "internally cooled" LMFR are not able to override its disadvantages. The latter include (1) higher fuel operating temperature, (2) difficulty in finding a suitable fuel alloy, (3) providing a satisfactory fuel container and (4) thermal-stress problems caused by power transients. B & W evaluated a number of design combinations using graphite or molybdenum to contain an unspecified liquid-metal fuel, bismuth or He coolant and single-region or two-region core geometry. Although there was no difference between the power-cost estimates for the internally cooled and externally cooled designs, the greater design complexity of the internally cooled concept puts it at a disadvantage with the externally cooled design currently being developed by B & W and Brookhaven.

U^{233} Reactor Fuel Plans

A review by American Standard of the status and future plans for the U^{233}-Th fuel cycle has re-emphasized the need for radiation damage data and development work on reprocessing and refabrication before costs for this fuel cycle can be quoted. Since both U^{233} and recycle Th will require semiremote fabrication, pyrometallurgical processing schemes may prove best.

Operating the MTR with a U^{233} core is expected to answer questions about burnup effects and nuclear properties for this isotope.

At present ten long-range power reactor projects* in the U. S. contemplate using U^{233} as a fuel. By 1963 these projects are expected to require a total of some 750 kg of U^{233} for critical experiments and trial reactor operation. (ASAE-S-4 July 1958)

---

* Advanced GCR (UCRL). D_2O-UO_2 Reactor (ANL), EBWR, HRE-III, LMFR, PAR, EBR-II, ZPR-III, Con-Ed, Fused Salt Reactor (ORNL).

New Approach to Fuel Processing

Gold-nickel alloy has been found promising as a corrosion-resistant material for fuel-reprocessing plants. Its resistance to all common acids except aqua regia would suit it to a single-line, multipurpose plant capable of handling even zirconium-bearing fuels requiring an HF-HNO_3 solvent. A preliminary study of this possibility by Sylvania-Corning Nuclear Corp. was reported by C. I. Whitman.

Hydrofluoric acid is now used in the plant at the Idaho Chemical Processing Plant to dissolve Zr fuels. However, this method has a limit—if uranium content is >2 wt%, UF_4 precipitate forms. Thus, an oxidizer such as HNO_3 is necessary to obtain the more soluble state U^{+6}. Herein lies the problem, since there is no conventional material of construction resistant to oxidizing HF media. This problem is also present in storing waste solution or in calcining waste for permanent storage.

Gold with a hardening agent was recognized as a possible containment material. Accordingly, 75% gold-25% nickel alloy was tested for resistance to HF-HNO_3 and to H_2SO_4. Test results, extremely encouraging, were as follows:

Medium	*Temp. (°C)*	*Duration (hr)*	*Corrosion rate (mil/yr)*
6*M* HNO_3, 6*M* HF	70	382	0.4
4*M* H NO_3, 3*M* HF	75	21	Weight gain
6*M* HNO_3, 3*M* HF	70	168	0.2
6*M* H_2SO_4, 6*M* HNO_3	Reflux > 100	216	2.4

Cost of the gold would not be unreasonable. A 1,000-kg/day processing plant would cost about $20,000,000. A gold-alloy dissolver, ¼ in. thick and 10–20 ft high, would cost $100,000–200,000.

Other advantages would accrue: The gold is reclaimable. Process improvements might pay for the gold, e.g., continuous instead of present batch process. New processes need not be developed.

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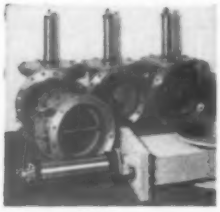

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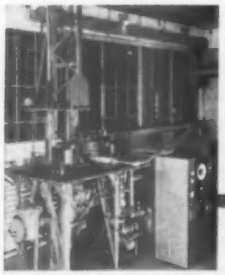

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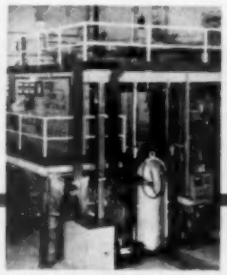

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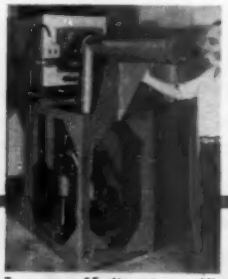

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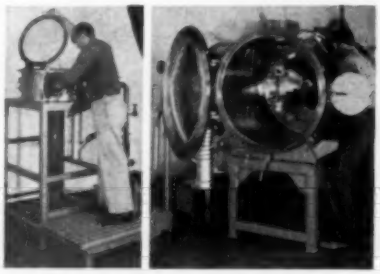

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NE NOTES

This article starts on page 158

Scanning the Literature

Reactor physics constants compilation. The Reactor Physics Constants Center at Argonne has released its first compilation of physics constants based on data available up to March 15, 1958. The 500-page reference includes fission-process and cross-section data plus separate sections pertaining to homogeneous thermal, heterogeneous-thermal, intermediate and fast reactors; two remaining sections cover shielding and experimental physics data. (ANL-5800; $7.00*)

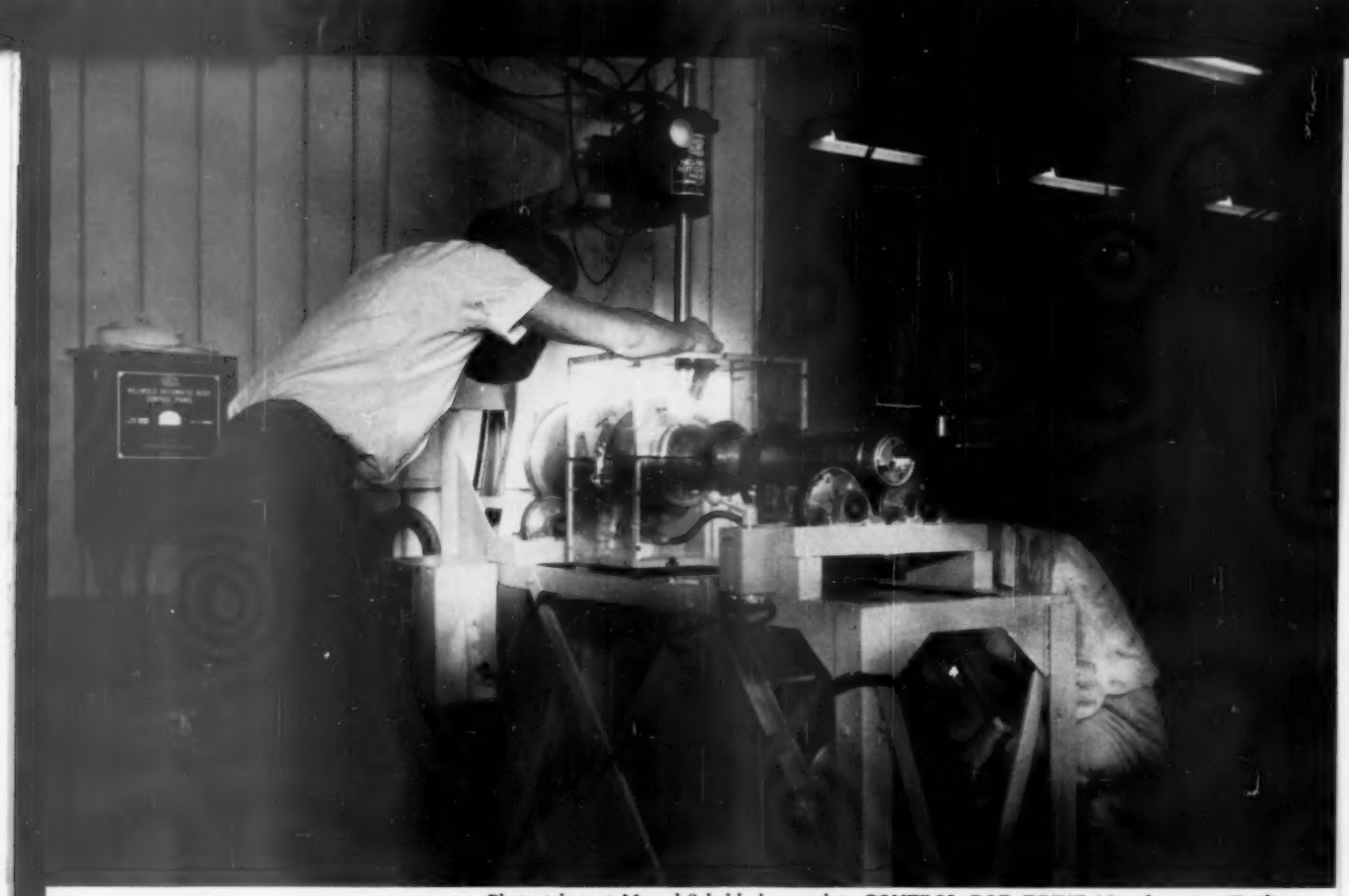
Heat transfer and fluid flow bibliography. A comprehensive bibliography compiled by the AEC lists annotated references to 2519 unclassified reports in the fields of heat transfer and fluid flow. Some sample subjects are: radioinduced heating, pump design, thermal and flow instrumentation, mass transfer and thermonuclear process data. Subject, report number availability and author indexes are included. (TID-3305 Supplement 1; $6.00*)

New approach-to-critical method. Harwell reports on a method for obtaining k_∞ from approach-to-critical experiments when the system is far from the critical condition. Previously prepared tables are used to separate the fundamental flux mode from the higher harmonics. (AERE R/R 2358)

Graphite radiation damage theory. Recent graphite irradiation and annealing experiments are described which give support to the Hennig-Hove model of radiation damage and annealing. (NAA-SR-2457; 75¢*)

Recent advances in niobium and plutonium technology. One of AEC's Nuclear Technology Briefs, this one, entitled Reactor Materials, was prepared by Battelle to provide authoritative reports on important work as it has emerged from AEC research and development programs. Areas covered for Pu and Nb include: neutron absorption, strength at high temperatures, alloys, corrosion resistance, fabricability and costs. (Available from AEC Div. of Information Services)

* Available from the Office of Technical Services, Dept. of Commerce, Washington 25, D. C.



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First Details of A.I.'s Epithermal Th Breeder

By R. J. BEELEY, *Atomics International, Canoga Park, California*

Our program for an epithermal thorium breeder reactor, the Advanced Epithermal Thorium Reactor (AETR), is the logical result of efforts to improve upon the performance of the Sodium Graphite Reactor (SGR). Judging from the preliminary work done so far, the AETR concept appears to offer substantial promise as a heat source for large power plants.

The present concept of the AETR involves a core-and-blanket system. The core consists of solid fuel rods or tubes of thorium-uranium alloy cooled with Na and moderated with Be metal or graphite. The blanket contains thorium or thorium-oxide rods also cooled with Na and moderated with Be or graphite. The conceptual design is still subject to modification by the results of the reactor-physics and engineering studies now in progress.

AETR Program

The over-all objective of the AETR program is to get enough information to permit a realistic economic evaluation of a full-scale reactor plant. The tasks planned for the first two phases of the program are:

▶ **Phase I—Evaluation studies:** During a period of about a year, conceptual design and analytical studies will be made of possible core and blanket configurations to determine the engineering problems, performance requirements and economic potential of the reactor system. Primary emphasis in Phase I will be on reactor physics analyses. Experimental work will include neutron absorption measurements on fission products, U^{233}, U^{235} and structural materials in a variety of neutron spectra.

▶ **Phase II—Critical experiment, materials research:** In Phase II, critical experiments will be run to establish the validity of the analytical data on nuclear performance obtained in Phase I as firmly as possible short of full-scale plant operation. In addition some research on materials peculiar to this type of reactor will be carried out.

The entire program depends in a crucial way upon the availability of materials provided by the Atomic Energy Commission, particularly a sufficient quantity of U^{235} to mock up a section of the AETR core in the critical experiments. Means of procuring this material are under negotiation.

Reactor Concept

The AETR may be regarded as a natural evolution from the Sodium Graphite Reactor, a concept which has been under intensive investigation at Atomics International for a number of years. In seeking directions for improvement in the over-all performance of the SGR, it appeared that major strides could be made by improving the neutron economy, by increasing the power density and by some increase in coolant temperatures.

In the SGR, the sodium coolant permits high operating temperature at low pressure. The materials present in the SGR are essentially chemically inert with respect to each other. These characteristics provide a high degree of reactor safety in addition to good thermal efficiency, and are retained in the AETR. Most of the constraints on the SGR arise from limitations on the materials which can be tolerated in a thermal reactor and from the necessity of keeping the graphite physically separated from the sodium. To obtain reasonable neutron economy in the thermal-neutron spectrum, zirconium is used to sheath the graphite. However, its poor mechanical properties at elevated temperatures set limitations on the coolant temperature. In addition, zirconium is expensive.

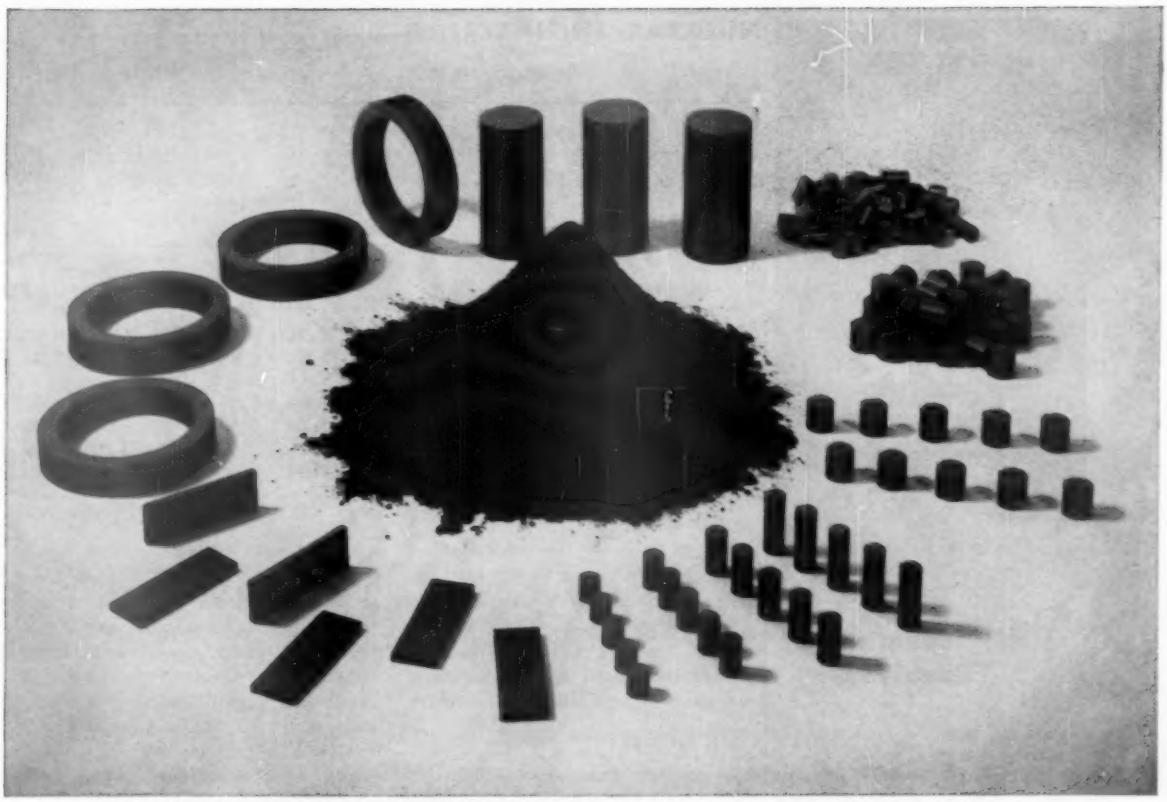
The use of beryllium in place of graphite would by-pass a number of these limitations; but the cost of the large amount of beryllium needed for a thermal reactor would be too great. Another way of easing the SGR constraints is to shift the neutron spectrum to energies above thermal; this is the idea behind AETR.

With a neutron spectrum concentrated in the 1–10,000-ev range (where structural and coolant cross sections are low) a power reactor could use common high-temperature materials for core components, could have a larger volume of coolant within the core (with resultant higher power density), and would need relatively modest amounts of Be for whatever moderation is required. In taking this

The AETR Program

Research and development by Atomics International on the AETR is sponsored by Southwest Atomic Energy Associates (NU, July '57, 28).

The AETR was selected as a concept which had promise of being economically competitive in the Southwest area of the United States by perhaps 1970, and which was not already under development by the AEC or other groups in the country. The AI-SAEA agreement covers two work phases, over four years. During the first year, Phase I will involve primarily analytical studies with a limited experimental effort. Phase II, which extends for a period of two years and eight months, will be concerned primarily with critical experiments. The cost of the first two phases is estimated at $5,354,000. Assuming favorable results, two paths are possible: a limited component-development program leading to the erection of a pilot plant or more extensive component development and construction of a full scale prototype.



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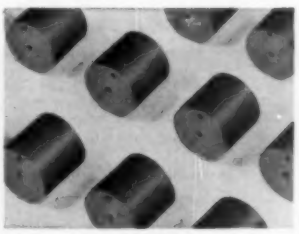

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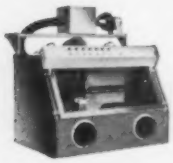
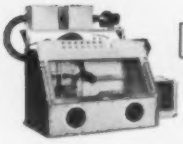


Biological preparations



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This article starts on page 162

TABLE 1—Neutron Yield (η) vs. Neutron Energy

Neutron energy region	*Fission neutrons per neutron absorbed, η*		
	U^{233}	U^{235}	Pu^{239}
Thermal	2.28 ± 0.02	2.06 ± 0.02	2.03 ± 0.02
0.15–0.5 ev	2.28 ± 0.09	2.06 ± 0.06	1.79 ± 0.07
0.4–3 ev	2.24 ± 0.05	1.6 ± 0.04	1.79 ± 0.04
0.6–6 ev	2.24 ± 0.05	1.50 ± 0.04	1.81 ± 0.04
2.5–25 ev	2.28 ± 0.05	1.52 ± 0.04	1.79 ± 0.04
8–130 ev	2.28 ± 0.05	1.48 ± 0.04	—
30 kev	2.25 ± 0.07	1.86 ± 0.04	2.01 ± 0.05
140 kev	2.43 ± 0.12	2.12 ± 0.10	2.35 ± 0.12
250 kev	2.45 ± 0.12	2.21 ± 0.15	2.60 ± 0.18
900 kev	2.60 ± 0.13	2.28 ± 0.08	2.57 ± 0.12

approach to avoid the constraints of the SGR, however, new problems arise. These include the uncertainties in the reactor physics of intermediate reactors and the added difficulty of control introduced by the increased average energy of the neutron spectrum.

AETR Physics

Core performance is critically dependent on the variation with neutron energy of η_{23} (the neutron yield per neutron absorbed in U^{233}) and the fission-product cross section σ_a. In Table 1 data by Spivak et al (*1*) are listed for η vs neutron energy for U^{233}, U^{235} and Pu^{239}.

Recent data from the MTR (*2*) reveal that η for U^{233} dips sharply over very narrow energy bands. These data are not necessarily in conflict with the data of Table 1, which gives average values over relatively broad energy bands.

Both η_{25} and η_{49} fall rapidly with increasing neutron energy above thermal. In fast spectra Pu^{239} offers the best prospects for breeding, but the spectrum must be maintained above $\sim 10^5$ ev. However, high-power-density designs may have difficulty in achieving a spectrum this fast. Breeding, or at least a very good conversion ratio, appears possible with U^{233} at thermal energy, except for the material limitations discussed earlier. Of principal importance to the AETR concept, however, η_{23} remains nearly constant over the thermal to kilovolt range; this suggests that the conversion ratio achievable in the thermal region can be improved upon at higher energies where structural and coolant cross sections are low. Furthermore, there is no necessity for going to really fast spectra, where limitations on volume of structure and coolant again become important. While there is a significant gap in the data between 100 ev and 30 kev, it is likely that the major effects of resonances upon η_{23} occur in the region below 100 ev, and that no spectacular behavior will be found above that energy.

The poisoning effect of fission products will be important in establishing the optimum neutron spectrum for the AETR. The information on fission-product absorption vs. energy is meager above the epithermal region. However, Greebler, Hurwitz and Storm (*3*) on theoretical grounds conclude that the average cross-section of a pair of fission products varies with energy as shown in Table 2.

An additional influence on the

TABLE 2—Fission-Product Absorption Cross Sections

Cross section	*Symbol*	*Unit*	*Neutron energy (ev)*				
			10^2	10^3	10^4	10^5	10^6
Fission-product absorption	$\bar{\sigma}_a$	Barns per fission	15.4	2.8	0.49	0.10	0.09
U^{233} fission	σ_f	Barns per atom	32	8.8	5.0	2.5	1.9
	$\bar{\sigma}_a/\sigma_f$	—	0.48	0.32	0.10	0.04	0.05

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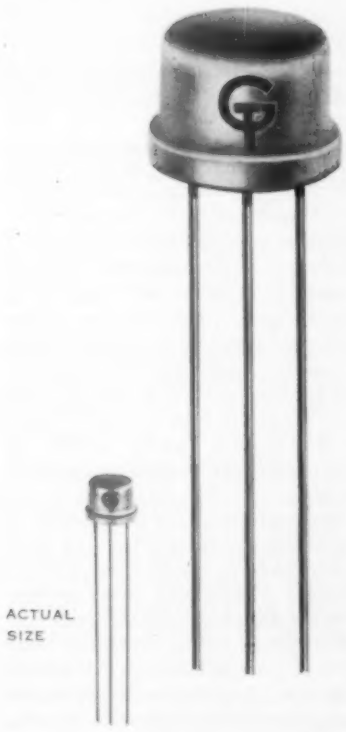

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neutron economy of the AETR is the cross section of Pa^{233}. The half-life of this isotope in the production chain $Th^{233} \rightarrow Pa^{233} \rightarrow U^{233}$ is 27.4 days; its cross section will be important in a reactor of high specific power and neutron flux. The thermal absorption cross section of Pa^{233} is ~66 barns (*4*), one eighth of the thermal absorption cross section of U^{233}. However, its resonance integral may well be comparable with that of U^{233}. If this is the case, it may be necessary to eliminate thorium from the high-flux region of the AETR and breed U^{233} only in the blanket.

From the results so far, it appears that breeding ratios above 1.0 are obtainable over the entire epithermal range and that the breeding ratio increases with higher average neutron energy. The poisoning effect of fission products is of the order of 3–5% after an average fuel exposure of 10,000 Mwd/ton. Neutron losses to Pa^{233} are somewhat uncertain due to lack of good cross section data. These losses depend to a considerable extent upon the fuel loading in the reactor, since the neutron flux level varies inversely with loading for a fixed power output. The burnout of Pa^{233} may produce a reduction in breeding ratio of 2–6%. The effect of breeding ratio on fuel economics is minor providing it is close to unity. The reactivity of the reactor declines with exposure because of losses to Pa and to fission products and because the Pa^{233} inventory in the core represents converted fuel; as a result the fuel loading declines in spite of a breeding ratio in excess of unity.

Investigation of the best means of controlling the reactor has just been initiated and no results have yet been obtained. The rather short neutron lifetime, together with the relatively small fraction of delayed neutrons from U^{233}, put requirements on the control system which are intermediate between the difficult-to-control fast breeder fueled with Pu^{239} and the relatively easy-to-control thermal reactor utilizing U^{235}.

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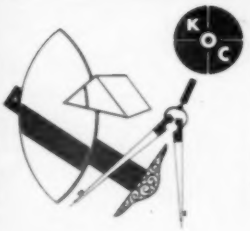

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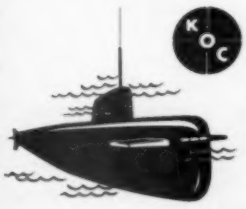

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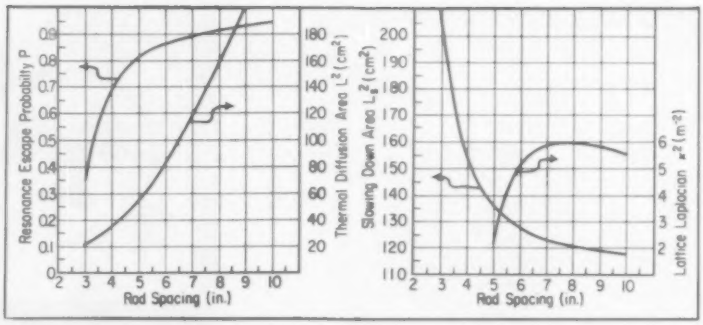

Resonance Escape Probability P
Thermal Diffusion Area L^2 (cm²)
Rod Spacing (in.)
Slowing Down Area L_s^2 (cm²)
Lattice Laplacian κ^2 (m⁻²)
Rod Spacing (in.)

FIG. 1. Reactor-physics parameters as a function of lattice spacing for NRU rods in heavy water

Flux Flattening Improves Output

By M. F. DURET and W. J. HENDERSON
Atomic Energy of Canada Ltd., Chalk River, Ontario, Canada

Since the core size of a large heavy-water power reactor is determined as much by heat removal as by reactivity requirements (especially if Pu enrichment is used) the designer will often have some excess reactivity at his disposal. Whatever excess reactivity is available after the fuel-irradiation life has been pushed to its metallurgical limit is best used to flatten the thermal flux so as to increase the power output for a given reactor size.

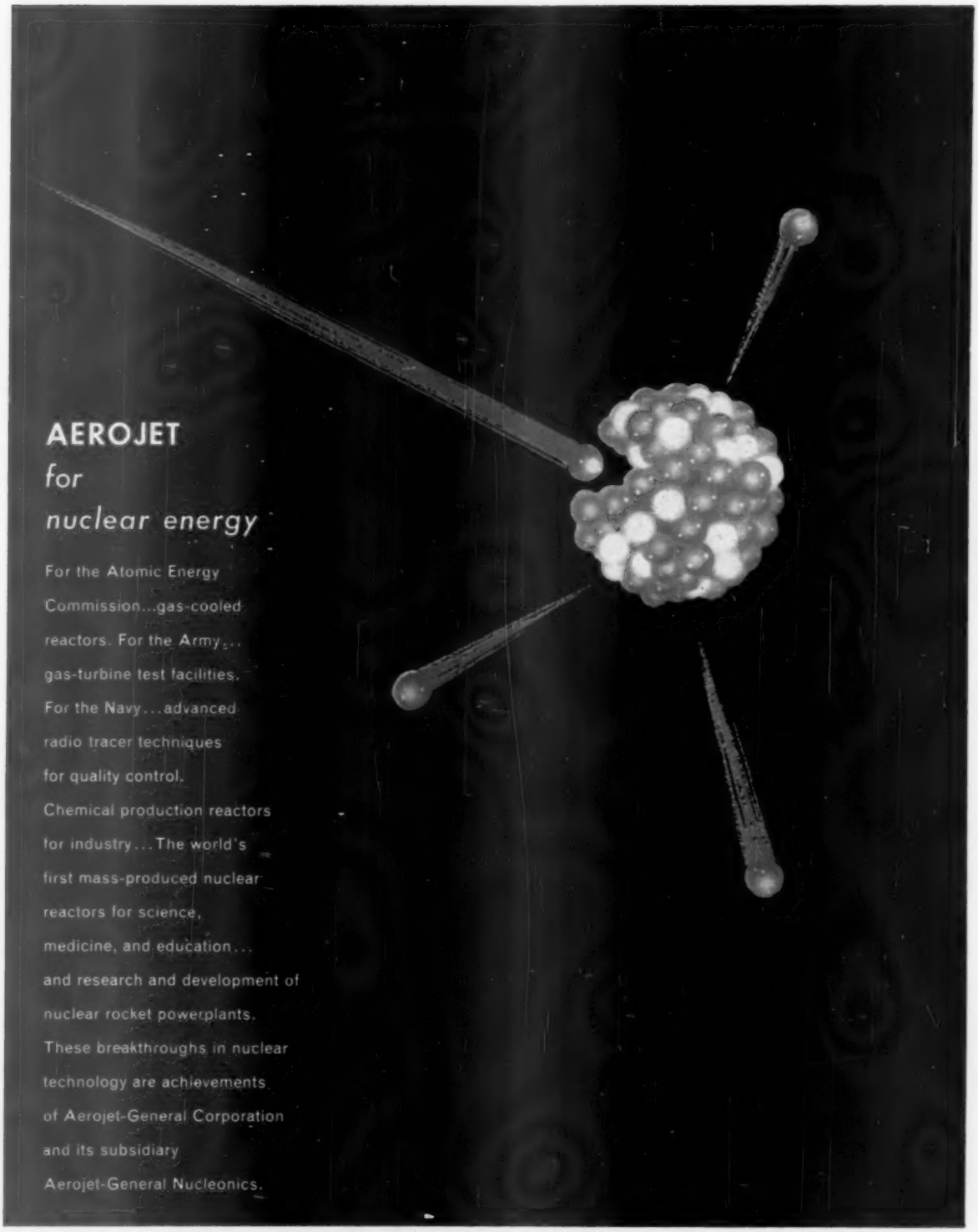
As an example, the most reactive uniformly loaded core of NRU rods (lattice spacing = 7.75 in.) has a critical radius of about 1 meter with a water reflector. This core would provide only about 120 Mw(th) if the flux is normalized so that the hottest rod in the reactor produces 2 Mw. This is the best rating obtainable with NRU rods. To provide 400 Mw(th) it would be necessary to go to a more complicated rod design with a better heat transfer rate, to increase the number of rods in the reactor or to flatten the thermal flux so that a greater fraction of the rods are operating close to their rating. All these methods will result indirectly in increasing the size of the reactor.

But flattening the flux distribution permits one to keep core size fixed while increasing total power and lowering fuel inventory—though at the expense of increasing the neutron leakage. Typically our results show a 28% increase in power and 14% decrease in inventory coupled with a 18% higher neutron leakage.

The method of thermal-flux flattening considered was that of increasing the resonance trap in the central part of the reactor; the number of neutrons becoming thermal is thus reduced in this region tending to flatten the

Effect of Inner-zone Radius on Power Flattening

	Average-to-maximum power density, P_{ave}		
r_o/R_o	(R_o = 150 cm)	(R_o = 135 cm)	(R_o = 115 c)
0.45	0.637	0.671	0.739
0.50	0.668	0.715	0.745
0.55	0.704	0.767	0.712
0.60	0.758	0.767	0.666
0.65	0.789	0.713	0.631
0.70	0.727	0.667	0.609
0.75	0.659	0.631	0.593
1.00	0.508	0.518	0.540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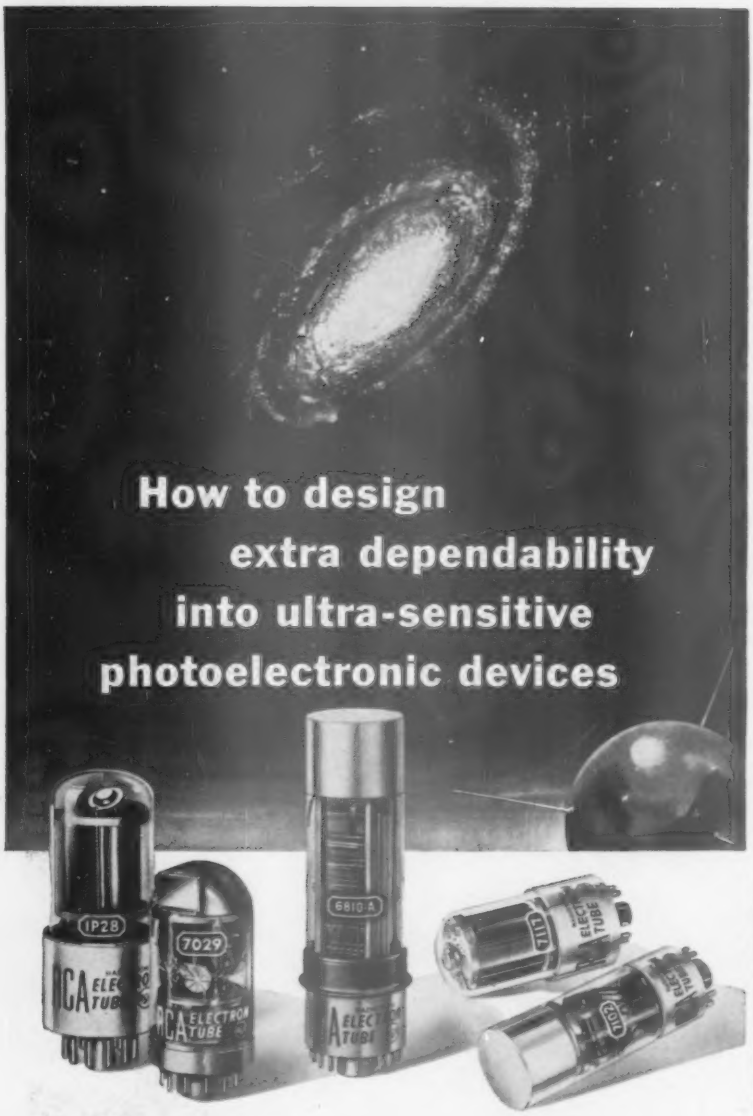

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thermal flux. Other methods could be investigated in a similar way.

Reactor Model

For an initial study of flux flattening the following system was selected, partly because of the engineering simplicity and partly because the equations can be readily solved on an analog computer. The reactor studied is a 3-zone cylindrical reactor infinite in height and radius. The outside zone is an infinitely thick light-water reflector, which, for practical purposes, is equivalent to about 25 cm of light water. The annular lattice of NRU rods with spacing S_2 has an outer radius R_e and an inner radius r_e. The lattice spacing in the center zone is S_1.

The resonance escape probability p, the thermal diffusion area L^2 and the slowing down area L_s^2 for NRU rods in D_2O have been taken from work done by J. D. Stewart at Chalk River. They are shown as functions of lattice spacing in Figs. 1a and b. The unpoisoned Laplacian, κ^2 for this lattice is shown as a function of lattice spacing in Fig. 1b where f, the thermal utilization, has been taken as 0.96. In the actual computation $\eta\epsilon$ was taken as 1.338 and the variation in f with spacing (due to absorption in moderator) and shape of flux (due to changes in xenon poisoning) were ignored, a constant value 0.915 being chosen. This allows approximately 5% Δk for control and poison. The effect of using an infinite height rather than, say, 360 cm is to add about 1.5% Δk to the reactivity. This effect will vary slightly from case to case.

Other parameters used in the calculation are:

		Value	
Quantity	*Symbol*	H_2O	D_2O
Transport mean free path for thermal neutrons	λ_t	0.48 cm	2.5 cm
Transport mean free path for fast neutrons	λ_f	3.58 cm	3.5 cm
Thermal diffusion area	L^2	8.33 cm^2	
Slowing-down area	L_s^2	33.8 cm^2	

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Flux Calculations

The two-group diffusion equations for fast and thermal flux in an infinitely long cylindrical reactor were replaced by the usual finite difference approximation in the new variables,

$$x = r^{1/2}\varphi_f$$
$$y = r^{1/2}\varphi_t$$

This leads to the system of equations:

$$x_n = \left[2 - \frac{1}{4n^2} + \frac{h^2}{L_{sn}^2}\right]^{-1}\left[x_{n+1} + x_{n-1} + \frac{k_n}{p_n}\frac{\lambda_{tn}}{\lambda_{fn}}\frac{h^2}{L_n^2}y_n\right]$$

$$y_n = \left[2 - \frac{1}{4n^2} + \frac{h^2}{L_n^2}\right]^{-1}\left[y_{n+1} + y_{n-1} + p_n\frac{\lambda_{fn}}{\lambda_{tn}}\frac{h^2}{L_{sn}^2}x_n\right]$$

where h is the mesh spacing and nh is the distance from the center of the reactor.

The method of using the Chalk River analog computer to solve an eigenvalue problem of this type is discussed by Bayly and Pearce.*

The eigenvalue in these calculations was taken to be the lattice spacing, S_1, in the central region. For a given R_o, r_o and S_2, S_1 was estimated and the resulting coefficients set on the analog. If necessary the estimate of S_1 was revised and new coefficients set on the analog, the procedure being repeated until the reactor was critical. The fast and thermal fluxes were then read

* J. G. Bayly, R. M. Pearce, Method of studying multi-region reactors with an analog computer, *Nuc. Sci. and Eng.* **2**, 352 (1957).

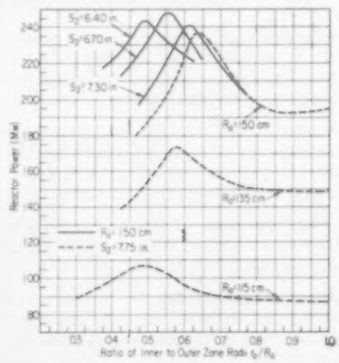

FIG. 2. Total reactor power as a function of inner-zone radius for different values of outer-zone radius R_o and outer-zone lattice spacing S_2

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2SC-32-1.5	0-32	0-1.5
DUAL OUTPUT	0-32	0-1.5
SC-32-2.5	0-32	0-2.5
SC-32-5	0-32	0-5
SC-32-10	0-32	0-10
SC-32-15	0-32	0-15
SC-60-2	0-60	0-2
SC-60-5	0-60	0-5
2SC-100-0.2	0-100	0-0.2
DUAL OUTPUT	0-100	0-0.2
SC-150-1	0-150	0-1
SC-300-1	0-300	0-1

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SC-18-1	0-18	0-1
SC-18-2	0-18	0-2
SC-18-4	0-18	0-4
SC-36-0.5	0-36	0-0.5
SC-36-1	0-36	0-1
SC-36-2	0-36	0-2
SC-3672-0.5	36-72	0-0.5
SC-3672-1	36-72	0-1

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PSC-38-1	32.5-42.5	1

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SC-325-100-6	325	100 MA.	6
SC-325-200-12	325	200 MA.	12
SC-325-200-28	325	200 MA.	28

VACUUM-TUBE TYPE

WIDE RANGE SERIES

MULTIPLE OUTPUT POWER SUPPLIES

REGULATION STABILITY TO 0.01%

MODEL	DC OUTPUT VOLTS	DC OUTPUT CURRENT
800B	#1 0-600	0-200 ma.
	#2 0-600	0-200 ma.
	Parallel 1 & 2 0-600	0-400 ma.
	Series 1 & 2 0-1200	0-200 ma.
510B	#1 200-500	0-200 ma.
	#2 200-500	0-200 ma.
	Parallel 1 & 2 200-500	0-400 ma.
	Series 1 & 2 400-1000	0-200 ma.
430D	#1 0-450	0-300 ma.
	#2 0-450	0-300 ma.
	Parallel 1 & 2 0-450	0-600 ma.
	Series 1 & 2 0-900	0-300 ma.
2400B	#1 0-400	0-150 ma.
	#2 0-400	0-150 ma.
	#3 0-150 Bias	0-5 ma.
	Parallel 1 & 2 0-400	0-300 ma.
	Series 1 & 2 0-800	0-150 ma.
103 Unregulated	#1 0-300	0-75 ma.
	#2 0-300	0-75 ma.
	#3 -50 to + 50	0-5 ma.
	Parallel 1 & 2 0-300	0-150 ma.

0-400 VOLT POWER SUPPLIES

REGULATION STABILITY TO 0.02%

MODEL	DC OUTPUT VOLTS	DC OUTPUT CURRENT
400B	0-400 0-150 Bias	0-150 ma. 0-5 ma.
315B	0-400 0-150 Bias	0-150 ma. 0-5 ma.
141B	0-400	0-150 ma.
2000B	0-400	0-150 ma.
730B	0-350	0-3 Amp.
720B	0-350	0-2.25 Amp.
710B	0-350	0-1.5 Amp.
700B	0-350	0-750 ma.

VACUUM-TUBE TYPE

0-600 VOLT POWER SUPPLIES

REGULATION STABILITY TO 0.01%

MODEL	DC OUTPUT VOLTS	DC OUTPUT CURRENT
780B	0-600	0-3 Amp.
770B	0-600	0-2.25 Amp.
760B	0-600	0-1.5 Amp.
750B	0-600	0-750 ma.
605	0-600	0-500 ma.
	0-150 Bias	0-5 ma.
615B	0-600	0-300 ma.
	0-150 Bias	0-5 ma.
500RB	0-600	0-300 ma.
815B	0-600	0-200 ma.
	0-150 Bias	0-5 ma.
245B	200-500	0-200 ma.

HIGH VOLTAGE POWER SUPPLIES

REGULATION STABILITY TO 0.004%

MODEL	DC OUTPUT VOLTS	DC OUTPUT CURRENT
2500	0-2500	0-50 ma.
1520B	0-1500	0-200 ma.
1220B	0-1200	0-20 ma.
1250B	0-1000	0-500 ma.
1020B	0-1000	0-50 ma.

KR SERIES

0.1% REGULATION STABILITY

1.5 AMP. KR SERIES

MODEL	DC OUTPUT VOLTS
KR16	0-150
KR17	100-200
KR18	195-325
KR19	295-450

600 Ma. KR SERIES

MODEL	DC OUTPUT VOLTS
KR8	0-150
KR5	100-200
KR6	195-325
KR7	295-450

VACUUM-TUBE TYPE

0.1% REGULATION STABILITY

300 Ma. KR SERIES

MODEL	DC OUTPUT VOLTS
KR12	0-150
KR3	100-200
KR4	195-325
KR10	295-450

125 Ma. KR SERIES

MODEL	DC OUTPUT VOLTS
KR11	0-150
KR1	100-200
KR2	195-325
KR9	295-450

MAGNETIC TUBELESS

0.5% REGULATION STABILITY

MODEL	DC OUTPUT VOLTS	DC OUTPUT AMPS.
KM236-15	0.1-36	0-15 Amp.
KM236-30	0.1-36	0-30 Amp.
KM236-50	0.1-36	0-50 Amp.

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MODEL	DC OUTPUT VOLTS		DC OUTPUT AMPS.	
	Low Range	High Range	High Range	Low Range
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KM-252	5-20	20-35	7.0	12.0
KM-253	20-40	40-60	4.0	6.0
KM-254	30-60	60-90	2.8	4.0
KM-255	60-120	120-180	1.4	2.0
KM-256	150-200	200-250	1.0	1.5
KM-257	250-325	325-400	0.6	0.75

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directly off the analog computer.

The reactor power, normalized to 1 Mw in the hottest rod, is given by

$$2\pi D_1 \int_0^{r_o} \varphi(r) r\, dr + 2\pi D_2 \int_{r_o}^{R_o} \varphi(r) r\, dr$$

where D_1 is the number of rods per unit area in the central region, D_2 the number of rods per unit area in the annulus and φ the thermal flux normalized to the same value of $\varphi_{1_{max}}$ in all reactors. D_1 can be calculated from S_1 and the integral computed easily by numerical integration.

S_1 was determined for various values of r_o and for three values of R_o (150 cm, 135 cm and 115 cm) with $S_2 = 7.75$ in. The results plotted in Fig. 2 show reactor power as a function of r_o/R_o. Figure 4 shows the number of rods in the reactor as a function of r_o/R_o.

Figure 3 shows how the thermal flux changes shape as the radius of the inner zone is changed.

As a check on the accuracy of the analog the values of R_o were calculated analytically for the case $r_o/R_o = 1$ (which corresponds to a uniform lattice of spacing S_1 with a water reflector) taking the spacing S_1 as given by the analog. The results agree to better than 2% with the three values 150 cm, 135 cm, and 115 cm.

To investigate how the power output depends upon S_2, R_o was given the fixed value of 150 cm, S_2 the three values 6.4 in., 6.7 in., 7.3 in. and a sufficient number of r_o's were taken to ensure that the power passed through a maximum in each case.

Figures 2 and 4 show the power and

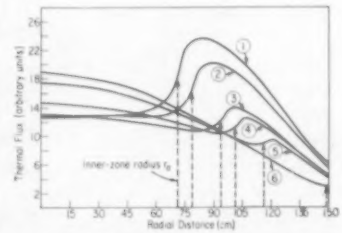

FIG. 3. Radial flux distribution for different values of inner-zone radius r_o. The six curves shown have $R_o = 150$ cm, $S_2 = 7.75$ in. and central zone lattice spacings S_1 as listed below:

Curve:	1	2	3
S_1 (in.):	4.95	5.15	5.42
r_o/R_o:	0.475	0.525	0.625
Curve:	4	5	6
S_1 (in.):	5.52	5.69	5.75
r_o/R_o:	0.675	0.775	1.000

ESCO Spuncast®, a centrifugal casting process for making symmetrical, tubular parts, is especially adapted to the manufacture of nuclear stator shells, piping and scram rods, for atomic power installations.

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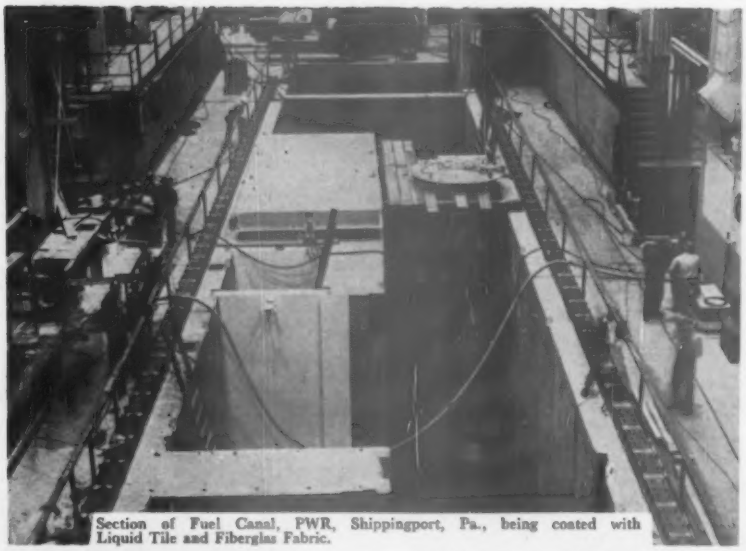

Section of Fuel Canal, PWR, Shippingport, Pa., being coated with Liquid Tile and Fiberglas Fabric.

10^9 R

. . . without breakdown
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ABRASION RESISTANCE: Sandblasting with #1 silica fails to remove it.

CHEMICAL RESISTANCE: Unaffected by most acids. Boiling in 5% H_2SO_4 and 5% NaOH produced no effect. Unaffected by intermittent exposure to extreme solvents through spillage, drainage and washing.

WATER RESISTANCE: 100% vapor/water proof, shown by submersion 15 years.

WEATHER RESISTANCE: 2400 hrs. (10 yr. equivalent) in Atlas Weatherometer produced no change.

LIFE: No known end to life of Liquid Tile.

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PWR—Shippingport, Pa.
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Expended Core Facility—NRTS, Idaho
Martin Company—Maryland
Test Reactor—Babcock & Wilcox, Va.
ERCO Plant, ACF Industries, Maryland
Union Carbide, Oak Ridge
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Decontamination Bldg.—Argonne National Lab
Physics & Metallurgical Hot Lab—Argonne National Lab
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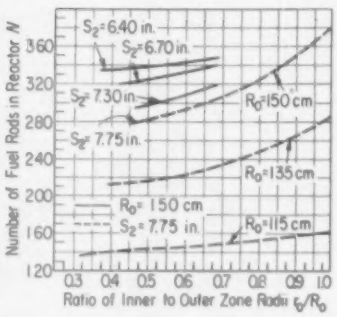

FIG. 4. Total number of fuel rods as a function of inner-zone radius for different values of R_o and S_2

total number of rods in the reactor as a function of r_o/R_o in each case.

The fractional leakage from the reactor (relative to that for a uniform core) is plotted in Fig. 5.

Figure 2 shows that for a given core radius and lattice spacing in the intermediate zone there is an optimum radius of the central zone for maximum power. The reason for this can be seen from Figs. 2–4. Dividing the curves with different R_o (dotted curves) in Fig. 2 by the dotted curves in Fig. 4 gives P_{avg} the average power produced per rod. Since the hottest rod produces 1 Mw, $P = 1$ would correspond to a perfectly flat thermal flux. The value of P_{avg} is thus a measure of how nearly the flux approximates a perfectly flat flux for the different configurations. P_{avg} is given in the table as a function of r_o and R_o.

The table and Fig. 3 show that the thermal flux is flattened as the power approaches its maximum value. As the radius of the core is made larger the power curves maintain the same general shape but are shifted bodily upwards. This is merely because there is more uranium in the larger system.

Because the amount of uranium must be reduced from that in a uniform core to achieve flux flattening using a two-zone core, the increase in average power per rod does not show up directly as an increase in power output from the reactor; rather, it shows up partly as an increase in power output and partly as a decrease in the amount of uranium necessary to produce this power. When $r_o = R_o$ the reactor consists of a uniform core of spacing S_1 and a water reflector. The maximum power output and corresponding fuel inventory relative to the case

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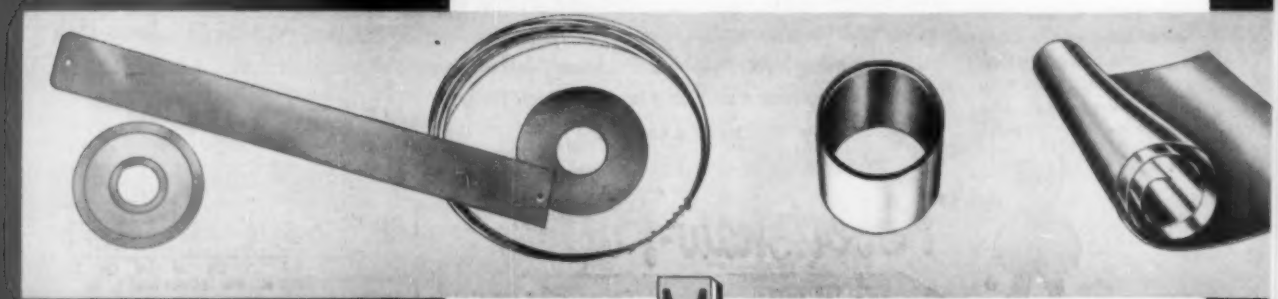

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This article starts on page 168

$r_o = R_o$ behaves as follows with R_o:

R_o (cm)	*Power output*	*U requirement*
150	1.22	0.78
135	1.18	0.77
115	1.23	0.89

In an attempt to get more uranium into the reactor it was decided to reduce the lattice spacing in the intermediate zone. The results are shown by the solid curves in Figs. 2 and 4, for $R_o = 150$ cm. As the spacing in the intermediate zone is lowered the amount of uranium in the reactor is increased tending to increase the power but the flux flattening attainable begins to fall off. The net result is that the maximum power attainable first increases, then decreases as we increase the amount of uranium in the intermediate zone. The best case seems to correspond to a spacing of 6.7 in. in the intermediate zone. At this spacing κ^2 for the intermediate lattice is slightly below the maximum possible.

The values of P_{avg} corresponding to the maxima of the solid curves in Fig. 2 are:

S_2	7.75	7.30	6.70	6.40
P_{avg}	0.795	0.777	0.754	0.718

The maximum power and corresponding uranium requirement relative to that for the uniform core of radius 150 cm are:

S_2	*Power output*	*U requirement*
7.75	1.22	0.77
7.30	1.24	0.81
6.70	1.28	0.86
6.40	1.25	0.88

Figure 5 shows the fractional leakage from the reactor relative to that for the uniform 150-cm core as a function of r_o/R_o. The radial leakage from the reactor producing the most power is about 10%–25% larger than

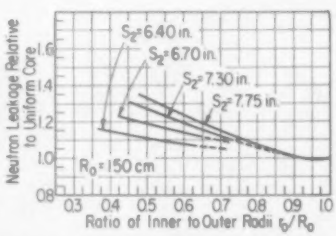

FIG. 5. Neutron leakage relative to a uniformly loaded core as a function of r_o and S_2

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that from the uniform core. This extra leakage represents the price we must pay to flatten the flux and increase the power output.

APPENDIX

Boundary conditions. At the center of the reactor the difference equations are inaccurate since the correct solutions of the differential equations have a vertical tangent at the origin. B. Davison has pointed out that sufficient accuracy is obtained by replacing the term $2 - \frac{1}{4}n^2$ with $(1 + 1/n)^{\frac{1}{2}} + (1 - 1/n)^{\frac{1}{2}}$. The necessary boundary condition at the center of the reactor ($n = 0$) is $x = y = 0$.

To make the best use of the 40 operational amplifiers available only the flux in the reacting core was determined, the boundary conditions at the lattice reflector interface being determined from the analytical solutions in the reflector, as follows.

The solutions in the reflector are

$$\varphi_f = AK_0(r/L_0)$$
$$\varphi_t = SAK_0(r/L_0) + CK_0(r/L)$$
$$S = \frac{\lambda_f}{\lambda_t}\frac{L^2}{L_0^2 - L^2}$$

and $K_0(x)$ is the Bessel function satisfying

$$\frac{d^2y}{dx^2} + \frac{1}{x}\frac{dy}{dx} - y = 0$$

which is regular at infinity.

A and C are constants and the lattice parameters are appropriate for the light water in the reflector. The fast and thermal fluxes and currents must be continuous at the boundary. Applying the matching equations in the usual way and approximating the derivative on the inner side of the boundary at the point n by $(\varphi_n - \varphi_{n-1})/h$ (where h is the mesh spacing) we arrive at the boundary conditions at point n.

$$\varphi_{f_n} = \left[1 + \frac{\lambda_f'}{\lambda_f}h\alpha\right]^{-1}\varphi_{f(n-1)}$$

$$\varphi_{t_n} = \left[1 + \frac{\lambda_t'}{\lambda_t}h\beta\right]^{-1}\left[\varphi_{t(n-1)} + \frac{\lambda_t'}{\lambda_t}h(\beta - \alpha)S\varphi_{f_n}\right]$$

where λ_f' and λ_t' are transport mean free paths in H_2O and λ_f and λ_t are transport mean free paths in the U-D_2O lattice.

$$\alpha = \frac{1}{L_0}\frac{K_1(R_0/L_0)}{K_0(R_0/L_0)}$$
$$\beta = \frac{1}{L}\frac{K_1(R_0/L)}{K_0(R_0/L)}$$

where the parameters L and L_0 refer to the reflector material and

$$K_1(x) = -\frac{d}{dx}[K_0(x)]$$

The variables φ in these equations must be changed to the variables x and y before they can be applied to the analog. However, since these equations are of the same form as the equations for any point in the network within the core no modification of the analog is necessary to apply these boundary conditions.

Leakage. The radial leakage from the reactor is proportional to the current into the reflector. Using the analytical expressions given above for the flux in the reflector the fast and thermal currents into the reflector may be expressed in terms of the boundary values of the flux, as

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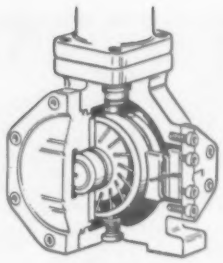

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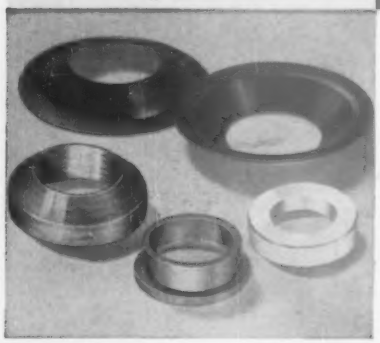

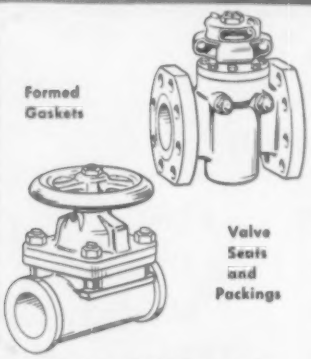

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This article starts on page 168

$$J_f = \frac{\lambda_f'}{3}\alpha\varphi_f(R_0)$$

$$J_t = \frac{\lambda_t'}{3}\beta\varphi_t(R_0) - \frac{\lambda_t}{3}S(\beta - \alpha)\varphi_f(R_0)$$

Under operating conditions each reactor has the same value for $\varphi_{t\max}$ since the hottest rod in each case produces one megawatt. Thus to compare neutron leakage from each reactor we have normalized the escape currents to the same value of $\varphi_{t\max}$. Actual leakages are not of much interest. Dividing by the power produced in the reactor we get a number which is proportional to the fraction of neutrons produced in the reactor which eventually escape. The total fractional leakage is then proportional to $(J_f + J_t)/P$.

N E BRIEF

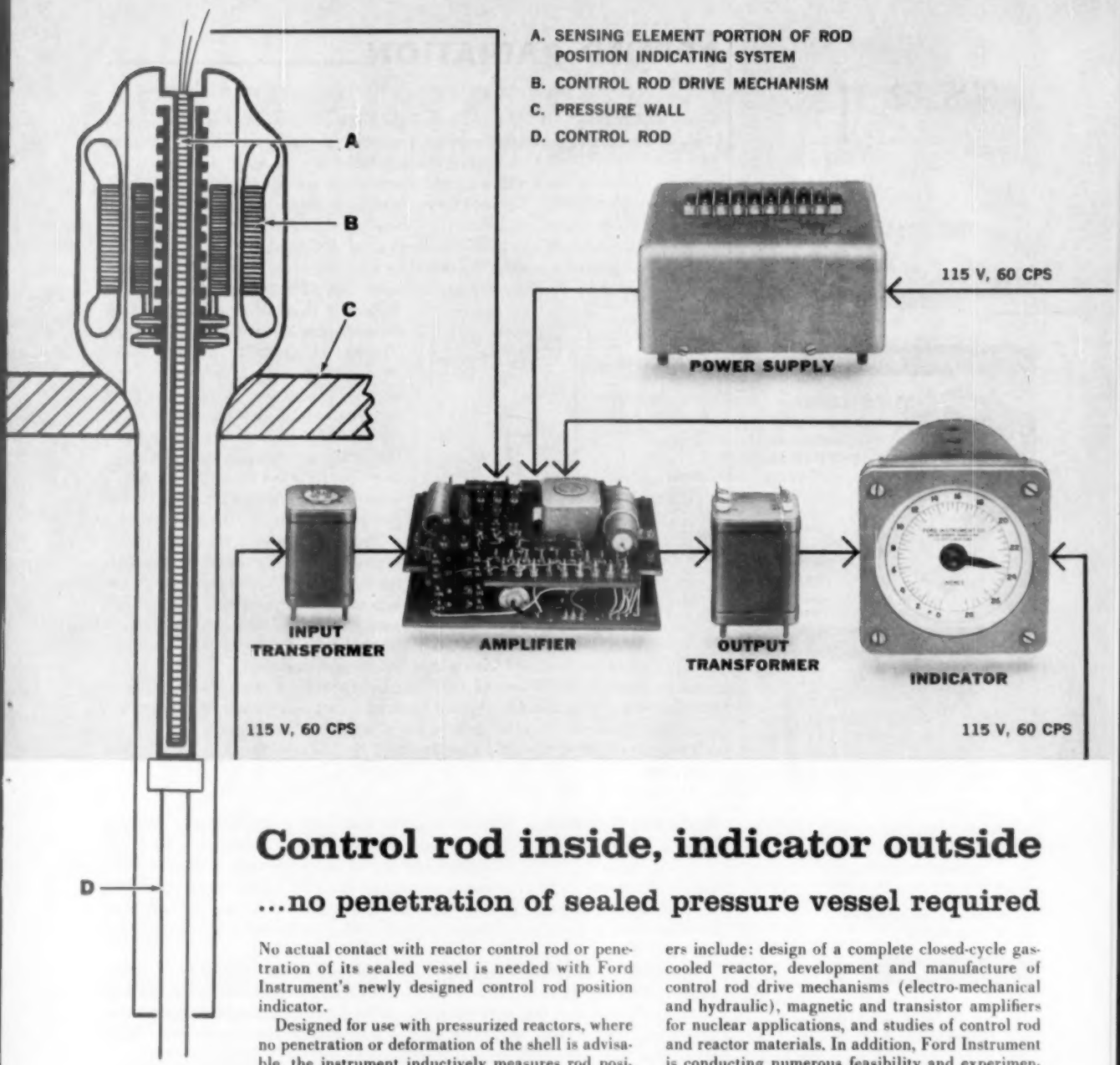
Ultrasonics improves slurries. A proposed breeder blanket for the Liquid Metal Fuel Reactor consists of a slurry of equiaxed thorium bismuthide particles in liquid bismuth.

Recovery of the bred U^{233} involves solution of the particles at high temperature, transfer of the U^{233} to the bismuth and reprecipitation of the $ThBi_2$ particles. In solutions of 5–10 wt% Th, cooling rates of ~30° C/min yield platelets of up to 1 cm in diameter; cooling rates of 1,000° C/sec are necessary to precipitate platelets of <50 microns—difficult to achieve on a large scale. The fine-platelet dispersion is highly viscous and the large platelets might cause plugging.

William B. Tarpley, Marvin L. Bromberg and John G. Thomas of Aeroprojects Inc. report ultrasonics has proved feasible as a means of producing equiaxed $ThBi_2$ particles of suitable size. Two approaches were used in submitting 158-gm melts of 5 wt% Th to transducer inputs of 20 kc and 1,000–1,600 watts at 450°–1,050° C.

In the first method, ultrasonic energy was applied during cooling from a temperature of complete solution (1,050° C) to 450°–500° C. Instead of the normal platelets formed, more nearly equiaxed particles were formed having a diameter of 100 microns, maximum, and generally less than 50 microns. The regular shape of the particles suggested bulk nucleation rather than fracture of large particles.

In the second method, large platelets are first formed by cooling to 450°–500° C. Pulsed ultrasonic treatment (30 sec on, 30 sec off) then produces equiaxed particles of <100-micron diameter.



Control rod inside, indicator outside

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No actual contact with reactor control rod or penetration of its sealed vessel is needed with Ford Instrument's newly designed control rod position indicator.

Designed for use with pressurized reactors, where no penetration or deformation of the shell is advisable, the instrument inductively measures rod position, from outside the vessel, and electrically transmits the position information to a remote dial indicator located almost any distance away. Completely transistorized, using printed circuit techniques, the system is compact and suitable for mounting within standard instrument cabinet drawers.

This control rod position indicator system is only one of the advanced nuclear developments completed, or in progress, at Ford Instrument Co. Others include: design of a complete closed-cycle gas-cooled reactor, development and manufacture of control rod drive mechanisms (electro-mechanical and hydraulic), magnetic and transistor amplifiers for nuclear applications, and studies of control rod and reactor materials. In addition, Ford Instrument is conducting numerous feasibility and experimental studies in the nuclear field, including the application of digital techniques to reactor control and the operation of control components at high temperatures.

Our nuclear engineers will be glad to give you further information on the Ford Instrument control rod position indicator, or to discuss solution of your specific nuclear problems in the other areas mentioned above. Write: Nuclear Sales, Ford Instrument Co., 31-10 Thomson Ave., Long Island City 1, N. Y.

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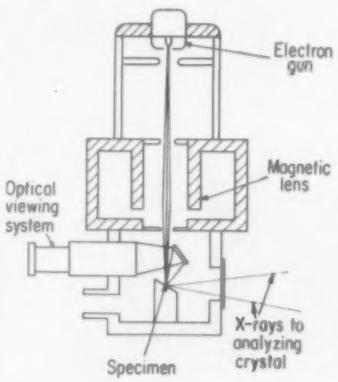
APPLIED RADIATION

X-ray Microanalysis Uses Electron Probe

An old technique has some new and valuable uses as the result of recent advances in electron beams. Exciting characteristic X-rays with electron irradiation and detecting them with a crystal spectrometer is a familiar type of analysis. But it has been limited because target heating requires low-intensity electron beams. The resultant low-intensity X-rays are sufficient to reveal only high-atomic-number elements in relatively large areas of the sample.

The new and better system developed by the Associated Electrical Industries Ltd. (sponsored by four research associations) uses a low-current electron beam focused in so small a spot that heating is small but X-ray intensity is large. Thermal conductivity provides sufficient cooling. The gain from having a tiny point source of X-rays and good focusing in the spectrometer permits identification of elements as far down the scale as titanium (and possibly down to chlorine when the system is evacuated). Moreover individual metal grains can be examined.



The figure shows a simplified prototype system. The sample is examined microscopically, and the area of interest is positioned for analysis. Then a 1.3-μamp beam of 30-kv electrons is focused into a 1-μ-dia spot, and the X-rays excited are analyzed with a bent-crystal spectrometer.

As an example of the use of the instrument: microphotographs show metal globules in the 40-μ transition region between a cast-iron surface and its enamel coat; analysis shows that the globules are almost 100% lead.

The instrument is currently manufactured by Metropolitan-Vickers at a cost of $24,000.

Radiation Decreases Beetle Reproduction

Another bug that may yield to irradiation is the flour beetle. Relatively small doses of radiation are found to reduce egg production somewhat and reduce fertility even more. The response is somewhat like that of the screw worm fly, which has been eliminated from some areas through the agency of radiation. Irradiated males have been released to mate with females and cause them to lay unfertilized eggs.

University of Chicago zoologists have irradiated two varieties of flour beetles at the ninth day of adult life. Doses were 2,000, 3,000, 4,000 and 5,000 r of X-rays delivered at a rate of 6,000 r/hr. After irradiation the bugs were mated in various types of pairs: irradiated females with nonirradiated males, etc. Eggs and larvae were counted.

The most dramatic effect was a reduction in the ability of males to fertilize eggs. This was directly proportional to the dose received. In contrast to this, the males did not lose their ability to stimulate egg laying, and the females did not lose much of their ability to produce eggs. In one of the varieties of beetles there was no noticeable reduction in the ability to produce eggs, but the number of larvae was always smaller for irradiated parents.

Standard Sources for Chamber Calibrations

Standardized gamma sources are now available at the National Bureau of Standards for calibration of cavity ionization chambers. They meet a significant need: intercalibration between free-air chambers designed for low-energy photons and cavity chambers designed for high-energy photons.

Free-air chambers are designed so that radiation acts on the filling gas in the same way that it does on free air. The roentgen is defined in terms of this kind of interaction, so calibration is not much of a problem. All you need is a knowledge of the physical parameters of the chamber and measurements to demonstrate

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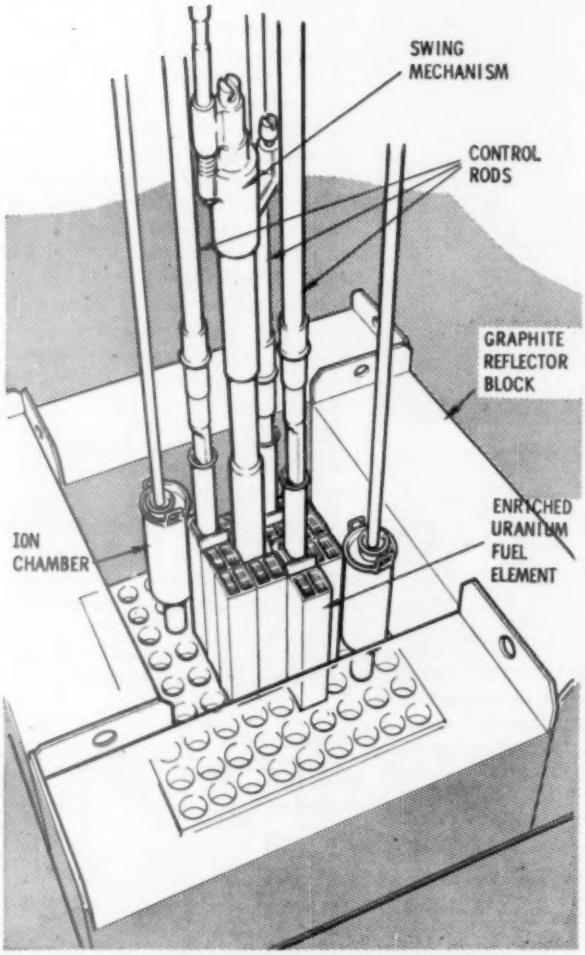
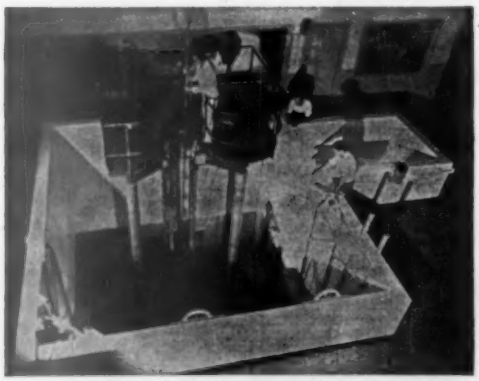


The core of the Pool Test Reactor at Chalk River, Canada



Assembly and testing of the Pool Test Reactor at Chalk River, Canada

another CANADAIR nuclear ACHIEVEMENT

In Canada's nuclear energy program the need arose for a method of determining the reactivity contributions of nuclear fuels and the absorbing effects of materials used in the construction of reactors.

Under contract from Atomic Energy of Canada Limited, Canadair's team of nuclear engineers designed, constructed and assembled the appropriate swimming pool type reactor, and a mechanical Swing Mechanism that would perform these reactivity measurements. This Swing Mechanism is an original design developed by Canadair.

The Swing Mechanism consists of an hydraulically-operated vertical assembly in which two samples of reactor materials, one of known, and the other of unknown reactivity, are alternately placed at the position of maximum neutron flux to provide an accurate measure of the reactivity of the unknown sample. High accuracy is achieved through very fast transit times and extremely close control of sample trajectory and cycling periodicity. Considerable flexibility is in turn possible through varying the length of stroke and ratios of successive half-cycle times and transit times.

The Canadair Swing Mechanism, of aluminum and stainless steel construction throughout, is applicable to any small core reactor but is particularly suitable for a pool type inasmuch as the water in the pool serves triply as a reservoir for the hydraulic system and as a coolant and moderator for the reactor. The sample carrier within the Mechanism can be reloaded under water with simple remote handling tools permitting safe, quick loading of already irradiated samples.

Canadair's nuclear division manufactures reactors, reactor components and specialized physics instruments to the most exacting individual specifications, and its team of experienced nuclear engineers and scientists is always available for expert consultation and advice on nuclear problems related to any field . . . basic research, generation of heat and power, medicine, agriculture and general industry. Inquiries are particularly invited from universities and laboratories.

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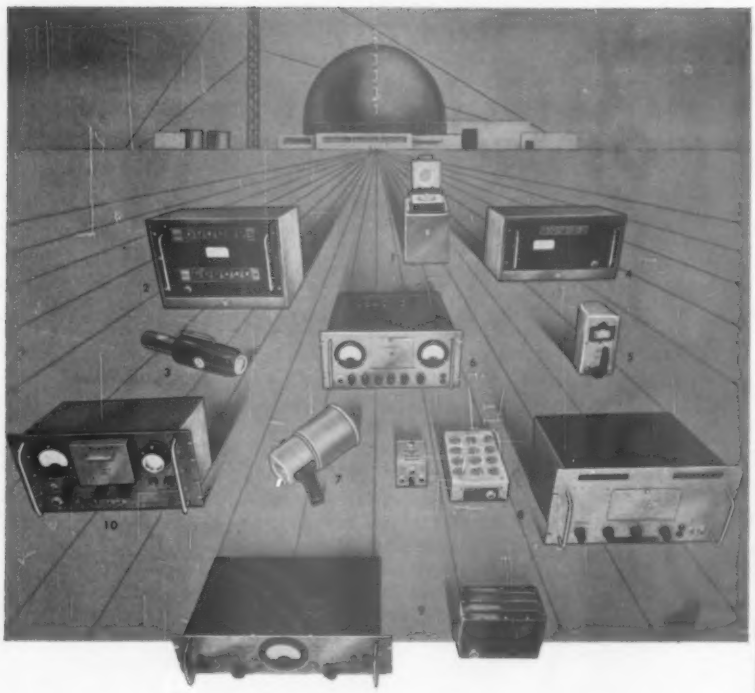

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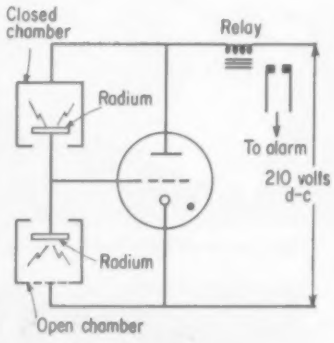
that it really operates as a free-air device.

With cavity chambers the problem is different. They depend on a three-way equilibrium among the radiation field, the walls of the chamber and the filling gas. Calibration requires a gamma field of precisely known intensity.

In its 1957 annual report the Bureau of Standards has indicated completion of three standardizations. One is a precision measurement of the dose from 1 mg of radium at 1 meter. The other two are comparisons between free-air and cavity chambers using small Co^{60} and Cs^{137} sources. The cavity chambers had been previously calibrated with the radium source. Agreement within 1% in the comparisons shows that there is now an overlap between the two methods of measurement for the first time.

Ionization Chamber Sniffs for Smoke

Smelling smoke with radioactivity is the job of a new fire alarm. An open and a closed ionization chamber are activated by radium alpha particles and remain in balance until smoke enters the open one. Smoke decreases the ionization, which unbalances the



circuit (above) and sets off the alarm.

The on-the-spot part of the system consists of a socket in the ceiling, a plug-in sensitive unit, and a protective cap. The plug-in unit contains both ionization chambers and the cold-cathode discharge tube. The system takes essentially no power until it is actuated.

The alarm is said to be faster than conventional fire detectors. It was invented in Switzerland and is marketed in England by Minerva Detector Co. and in the U. S. by Pyrotronics of Newark, N. J.

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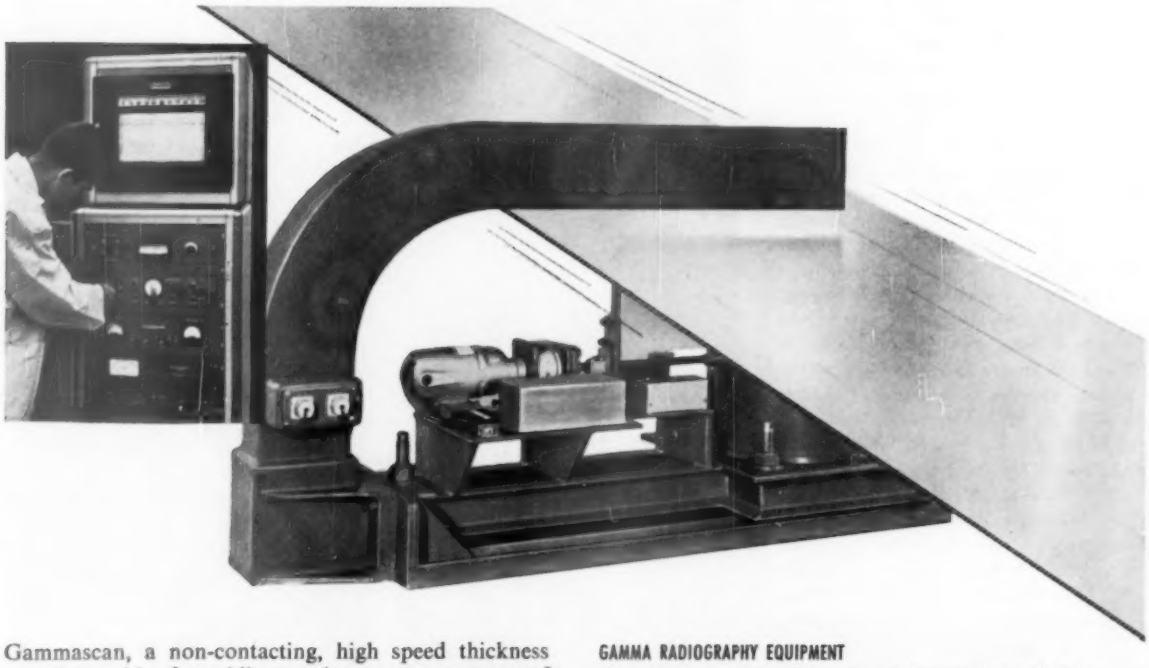

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Radiation Processing of Foods in Britain

By B. COLEBY,* T. HORNE,† M. INGRAM* and S. JEFFERSON†

Food irradiation studies in Britain are currently conducted on a budget of about $300,000. Investigations have ranged over most foodstuffs—40–50 types—with the emphasis on acceptability in the civilian market.

It is felt that, in the short term, sterilizing doses of radiation will only be of value for a small number of foods where quality changes are not easily detectable. For example, such processing offers a unique treatment for frozen whole egg, whereas no solution has yet been found to the problems encountered in milk sterilization. Smaller doses are promising for prolonging the storage life of meat, fruit and vegetables and for grain disinfestation.

Most of the effort so far has been sponsored by government organizations. The major research centers are the Wantage Radiation Laboratory, where the Technological Irradiation Group of the AERE Isotope Division has its laboratories, and the Low Temperature Research Station, Cambridge. These two groups work in close cooperation with other government laboratories and industry.

Radiation Facilities

The work has depended on Co^{60} because separated fission products have so far been available only on a small scale. In fact, fission-product sources have been limited almost entirely to 1,000-curie-cesium-137 sources for radiation-therapy units. The supply of Co^{60} itself has been limited. It was therefore decided to concentrate the bulk of it at Wantage.

Spent fuel elements. Although chemically separated fission products will not be available in large quantities until the end of 1960, spent fuel elements from the high-flux reactors Dido and Pluto at Harwell are now coming into use (Fig. 1).

The fuel elements are placed in a stainless-steel water tank 20 ft deep, 20 ft wide and 40 ft long, which is divided into a larger and a smaller compartment. The smaller is for cropping the fuel rods when they first arrive from the reactors. After checking for contamination, they are passed through the dividing wall into the larger irradiation compartment. The fuel elements are fitted into cadmium boxes before they are assembled in any number, so that there is a large margin of safety as regards criticality. When both Dido and Pluto reactors are in full operation, this spent-fuel-rod assembly will have a total activity of more than 3 megacuries.

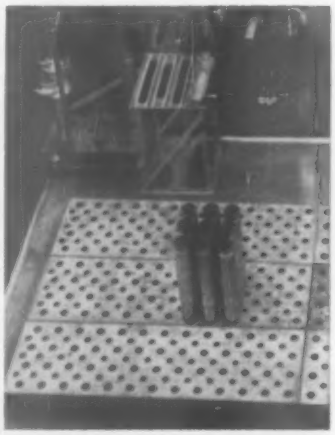

FIG. 1. Array of fuel elements on grid in Wantage irradiation pond. Fuel rod is being passed from storage tank into pond. Tank contains 20 ft of ion-free water and is lined with polished stainless steel

The temperature of both storage spaces and of the rod array itself can be controlled at any level from ambient down to −20° C. This unit will be used for bulk irradiation for feeding trials.

Wantage radiation sources. The limited amount of Co^{60} available in the U. K. has emphasized the need for versatility in source arrangements. Early experiences with compact lead shields indicated the need for larger radiation chambers to accommodate ancillary equipment.

A basic design of concrete shield has evolved in which the radioactive material is in the form of a number of articulated units, housed in stainless-steel tubing (Fig. 2) in a specially thickened wall of the shield. While the radioactivity is safely stored within the thick concrete wall, the arrangements of the tubes extending inside the radiation chamber can be adjusted to suit a wide range of experiments (Fig. 3).

At present, one source of 4,500 curies and a smaller one are used exclusively for food irradiation. Four other smaller ones are used for chemical processing. Soon, eighteen sources of this design will be in operation at Wantage Radiation Laboratory, though only three will be devoted to food studies. Each cell will contain three to eight tubes and up to 10,000 curies.

The cells are fitted with the usual safety interlock systems, both mechanical and electrical. As an added precaution, a novel safety switch inside each cell makes the master key available for 20 sec after the switch has been operated. Therefore, before the sources can be moved into the radiation chamber, the operator must first enter the cell to close the switch, and while doing so assure himself that no one is inside. He then has 20 sec to return along the labyrinth, withdraw the master key from the gate and lock it shut. Only then can the sources be moved.

At Wantage there is also a 4-Mev linear accelerator, typical of the type currently being manufactured in Britain. It now generates a little more than 1 kw of beam energy, but this can be increased. The linear accelerator is used to speed up investigations where high local doses can be useful. For treatment of surfaces and thin specimens, the machine has, at present, the advantage of cheapness. The penetrating power of the electron beam cannot, however, be increased beyond a certain level because, above this,

* Low Temperature Research Station, Cambridge, England.

† Technological Irradiation Group, Isotope Division, Atomic Energy Research Establishment, Harwell, Didcot, Berkshire, England.

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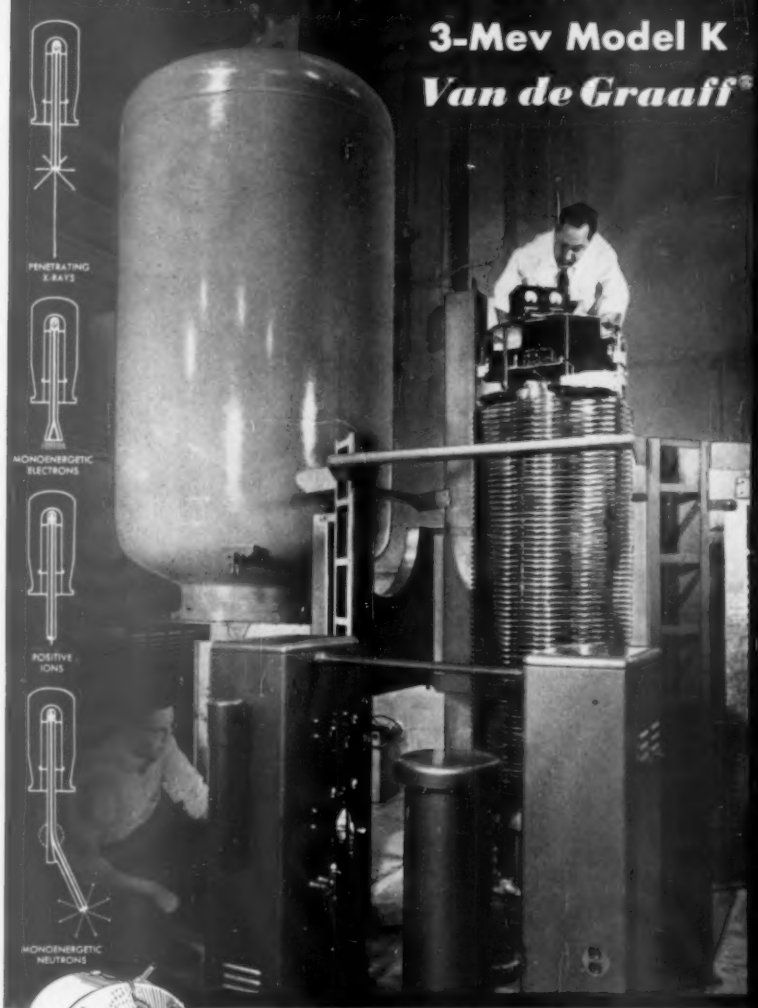

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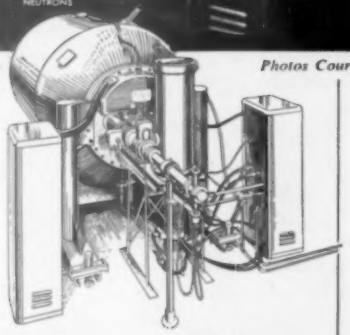

The 3-Mev, Model K Van de Graaff can be furnished for horizontal installation as illustrated above.

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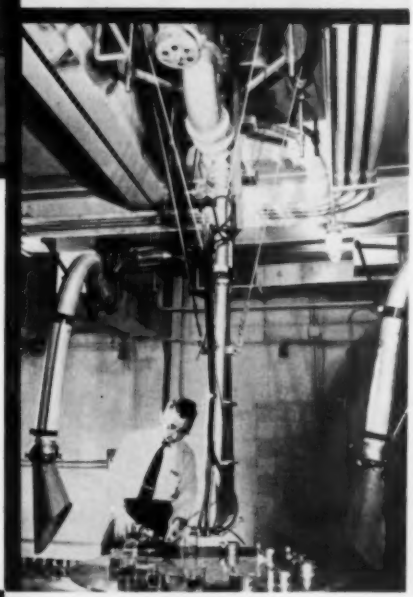

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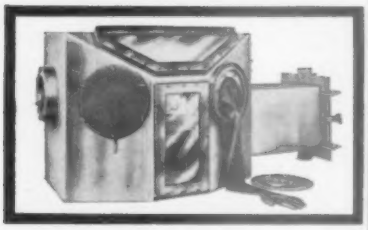

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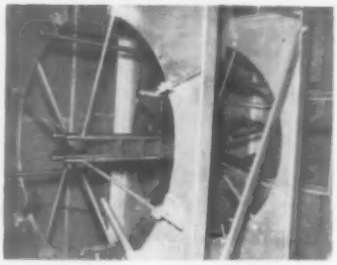

FIG. 2. Interior of Co^{60} experimental irradiation chamber. Sources are stored in 11-ft-thick concrete wall from which stainless-steel tubes are seen extending. Sources are moved along tubes by motor-driven flexible steel cables

radioactivity might be induced in the irradiated materials.

Cambridge radiation sources. For large-scale experiments, sources outside the laboratory are available: 4-Mev linear accelerators at Metropolitan-Vickers Electrical Co. and Mullard's Research Laboratory, and a 2-Mev Van de Graaff machine at Tube Investments Research Laboratories. The larger machines are capable of throughputs of about 500 megarad-lb/hr. The cobalt-60 sources at Wantage have also been used.

For laboratory experiments, the Cambridge unit has two X-ray generators, operating at 90 kv, 80 ma, which are arranged so that samples are irradiated from opposite sides simultaneously. The nearby Department of Radiotherapeutics allows the use of a 200-kv X-ray unit and a small cobalt-60 source. Though a larger cobalt-60 source is planned, space limitations at Cambridge are likely to restrict the scale of the work, and hence the intention is to concentrate on fundamental research.

Work at Cambridge

The Cambridge group has emphasized the use of low-dose "pasteurization" processes (*1*). Most of the fundamental investigations have been aimed at the preservation of meat, a commodity with which LTRS has had long experience.

The program, broadly, has been to define the effects of practical variables on the changes in flavor and odor and to compare these with the corresponding microbiological changes and storage life. Irradiation in the frozen state, for example, permits the dose to be doubled for about the same production of off-flavors. However, with low doses, the microorganisms are also protected and so the net gain is small.

The exact degree of freezing appears to be important: samples irradiated at −75° C were preferred to those irradiated at −40° C. Similar conclusions are suggested by a study of the amount of thiamine surviving the irradiation treatment of meats at these low temperatures.

The effect of oxygen has also been found important. Contrary to general experience, lean meat irradiated in the presence of oxygen has sometimes been preferred to that treated under nitrogen. The character of the odors was different, however, the "aldehydic" odor of the former contrasting with the mercaptan odor of meat irradiated under nitrogen. Deleterious color changes were more pronounced in the samples irradiated in air.

The use of various combined treatments is also being studied, such as additives to prevent flavor changes or a supplementary antibiotic treatment.

Fish. A good example of combining irradiation with another type of treatment has been the extension of the storage life of fish, investigated in collaboration with the Torry Research Station, Aberdeen.

Nonfatty fish, e.g., cod and lemon sole, prove more suitable for radiation treatment. Even with these, however, flavor changes severely limit the maximum acceptable radiation dosage to about 250,000 rads. A substantial increase in storage life (of the order of 3 times, under refrigeration) was obtained only when this radiation treatment was combined with an antibiotic dip.

Chickens. Chicken meat has been the subject of more thorough study.

The initial experiments were made with minced chicken meat packed in shallow aluminum cans under anaerobic conditions. Samples irradiated in the range 1–2-million rads and cooked by light steaming were considered unacceptable by most members of the taste panel. The threshold dose for the detection of off-flavors was about 250,000 rads, but irradiation odors in the raw bird could be detected with much smaller doses. No difficulty was experienced in placing such samples in order of increasing dose. When stored at 5° C, cans given 250,000 rads could

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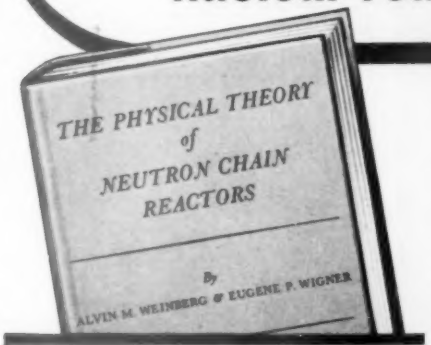

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The two authors began their collaboration in reactor theory during the war when Professor Wigner was head of the Theoretical Division of the Chicago Metallurgical Laboratory. This book is an outgrowth of their many years of work in nuclear physics, in reactor theory and in reactor design.

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be kept for at least 3 weeks, whereas unirradiated samples had spoiled within 1 week.

Classification of the microorganisms that survived irradiation of the chicken meat showed that some groups of them had been selectively destroyed. Consequently, the bacterial flora that developed after irradiation differed considerably from that normally found in chicken meat and included large numbers of previously undescribed types similar to lactobacilli (*2*).

Studies were extended to whole eviscerated chickens packed in polyethylene bags—i.e., in partially aerobic conditions. These were given doses ranging up to about 500,000 rads and were stored at 3° C. When cooked by roasting, irradiation flavor was only slight even with birds receiving the highest dose; if cooked by steaming, the off-flavors were more readily detectable. The storage life of the birds, as determined by odor and bacteriological examination, increased with dose and, for samples receiving the highest dose, was usually about three times longer than that of controls.

The microorganisms that survived irradiation were mostly Gram-positive, but during storage Gram-negative organisms re-established themselves as the predominant types. These were different in character from the original Gram-negative flora, being mainly *Achromobacteriacae* instead of the initial *Pseudomonas* (*3*).

Such experiments emphasize the necessity to study the microflora that develop after substerilization doses of radiation. At present, adequate refrigeration for the storage of such products seems essential to guard against the conceivable growth of pathogenic organisms.

It is concluded from these experiments that there is moderate promise in the use of low doses of radiation to prolong the storage life of chicken.

Frozen whole egg. A potentially useful process is the irradiation of frozen whole-egg pulp to eliminate salmonellae.

Large quantities of this commodity are imported into Britian from Asia packed in cans containing 22 lb or more. Because it is not pasteurized during preparation, a significant proportion is contaminated with salmonellae capable of causing food poisoning.

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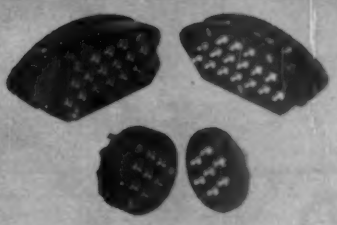

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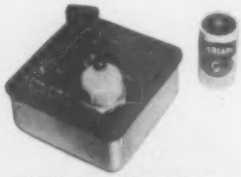

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FIG. 3. Arrangement of tubes in which Co^{60} sources are stored in 11-ft-thick wall. Bends in tubes prevent direct escape of radiation. Large central tube is used for irradiating small samples when Co^{60} would otherwise be idle

frozen egg have been found to eliminate salmonellae, while the resultant flavor changes are so slight that it is doubtful if they would be detected in commercial baked products made from the egg. The treatment has the advantages that the can need be neither opened nor thawed. Equally satisfactory alternative procedures do not exist.

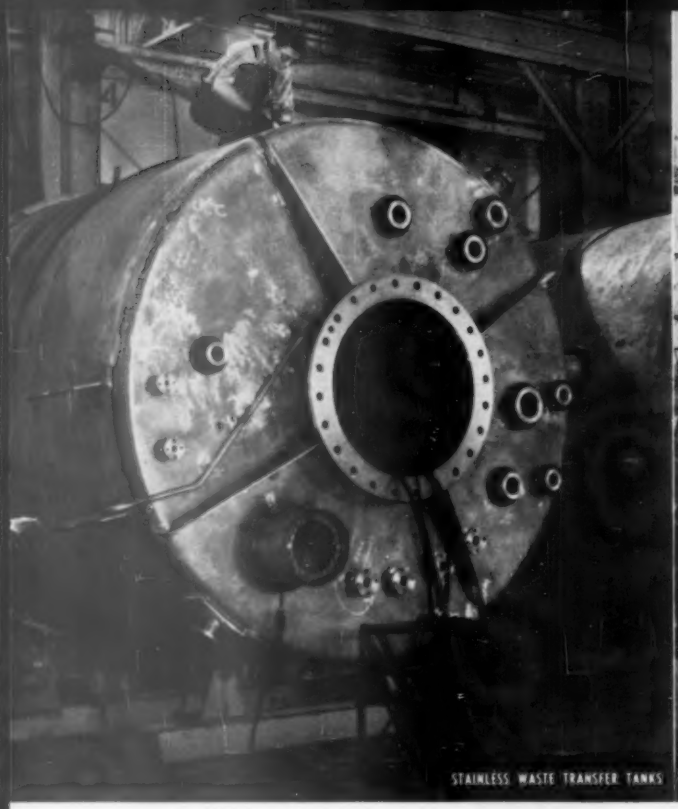
Potatoes. Although few studies have been made with fruits and vegetables, it has been found (in collaboration with Ditton Laboratory) that the sprouting of potatoes can be successfully inhibited by doses as low as 8,500 rads. Higher doses apparently damage the tissue of the tubers and make them more prone to subsequent rotting. Even with this treatment, however, adverse changes are noticed, particularly a large fluctuation in sugar content (*4*).

Work at Wantage

Work at Wantage has included studies of milk, pork, fruit, insect disinfestation and animal feeding.

Milk. A study has been made of the effects of radiation on the microflora of raw milk and certain meat products. With milk, 750,000 rads reduced the count to 1 organism/ml, but, after eight days of storage at 22° C, it had sometimes risen as high as 10^5/ml.

Some of the microorganisms surviving irradiation have been typed and appear to be similar to the thermophils



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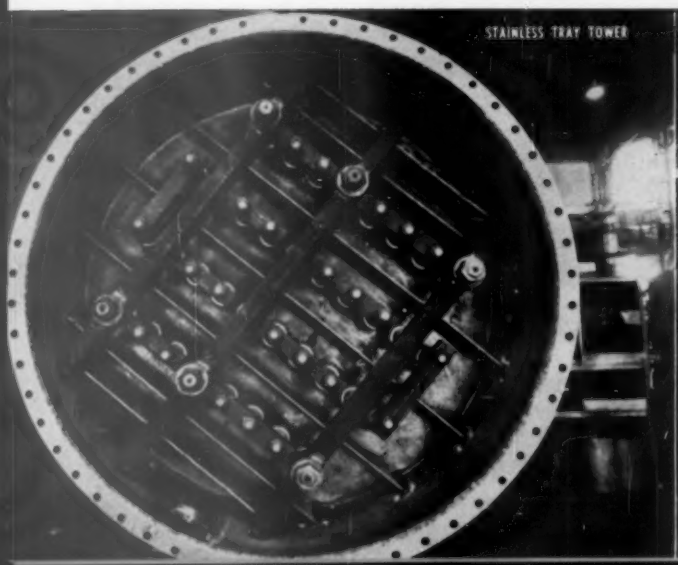

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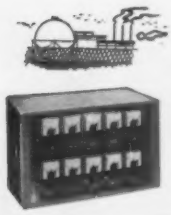

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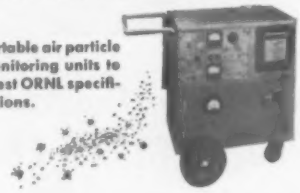

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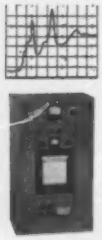

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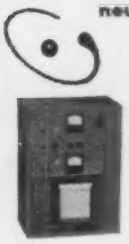

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that survive heat pasteurization. Flavor changes are marked, and although some improvement can be achieved by degassing, nothing approaching a commercial process is in sight.

Pork. In minced raw pork, 0.1% of the initial contaminants survive a dose of 0.5×10^6 rads. With this treatment flavor changes are slight, particularly after cooking. Hence it is felt that a useful prolongation of shelf life might be achieved at about this level of radiation.

Fruits and vegetables. Other workers are studying the effects of radiation on various fruits and their storage properties.

Some preliminary experiments indicate that radiation may delay softening in pears, but the relationship of dose level and flavor change is not well defined. Further studies, including an investigation into the possible control of fungal rots, are planned for next season. The inhibition of sprouting in potatoes, carrots, onions and mangolds has come in for study, as well as the use of a very low dose ($\simeq$4,000 rads) for delaying the sprouting of seed potatoes.

In Britain, mangolds are stored through the winter in closed, earth-covered clamps. If sprouting occurs, aphids carrying yellow virus "winter out" on the sprouts. When the clamps are opened in spring, the aphids migrate to sugar beet seedlings planted in the neighborhood and infect them with the yellow virus disease. A million tons of sugar beet was lost in Britain in 1957 from this cause. A dose of 10–20,000 rads not only prevents sprouting but also destroys the aphids, thus completely stopping the spread of the disease. Whether this will be an economical method of control remains to be seen (*5*).

Disinfestation. An entomology section is working on disinfestation of grain for storage (*6*). A wide range of insect species has been irradiated, and their relative survivals noted.

Among the most serious pests, *Calandra granaria* and *C. oryzae* have been shown to be among the more susceptible to radiation. A dose of 20,000 rads, which causes reproductive sterilization and inhibits the development of eggs and larvae, might well be sufficient to protect stored grain.

Work with the Ministry of Agri-

culture, Fisheries & Food Veterinary Research Laboratory, covers various helminthic parasites in meats, notably *Cysticercus bovis* in beef. This parasite is attracting increasing attention in the U. K., and a cheap method for its elimination would be very welcome. Preliminary results with *C. piciformis*, a similar parasite, suggest that a dose of less than 50,000 rads will be sufficient to break the life cycle.

Animal-feeding studies. Animal-feeding tests are being carried out to ensure that irradiated foods are innocuous. Eventually, several thousand rats will be needed.

A small feeding trial using 120 rats has already been made with a stock diet (modified diet of Bruce and Parkes) that had been irradiated with 3 and 6 megarads. Twenty pairs were fed at each level. The diet of all animals was supplemented with vitamin E (which is easily destroyed by radiation). At the end of six months, measurements of food intakes and weight gains showed no significant differences between these groups and the controls.

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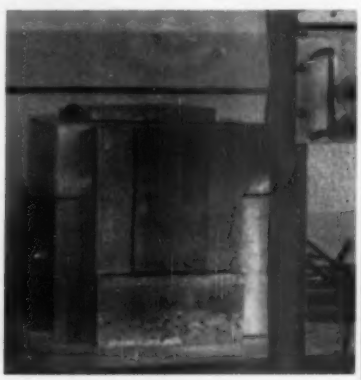
Details of the work at Cambridge are given in a research report by R. S. Hannan (Low Temperature Research Station Record Memorandum 314). British activity as a whole is outlined in the record of the Symposium on the Processing of Foods with Ionizing Radiations, Cambridge, Sept. '57, by B. Coleby (LTRS Record Memorandum No. 312). Copies of both documents may be obtained from the Superintendent, Low Temperature Research Station, Downing St., Cambridge, England.

Old Churches . . . Modern Counting



Old lead has generally been considered unsatisfactory for shielding low-level counters from external gamma radiation because of natural radioactivities.* We found† that after normal purification the remaining activity was due to RaD (+ RaE + RaF). The increase in the background of our counters surrounded by this lead was presumably due to bremsstrahlung from RaE. The half-life of RaD is 22 yr. Thus, lead that was purified about 200 yr ago from the parents of RaD could be expected to be free of contamination. This turned out to be true.

Since many old churches are being restored in The Netherlands, we bought old lead from the roofs. Ordinary "new" lead contains $\sim 10^{-5}$ μc RaD per gram, whereas the old lead was a factor of 10–100 less active. However, this source is less convenient since in restorations old and new leads are mixed.

Fortunately, early this year a fisherman caught in his net a 70-kg piece of lead dated 1702 A. D. About 50,000 kg has since been brought ashore, presumably the result of a shipwreck. This lead was measured to contain $< 5 \times 10^{-8}$ μc RaD per gram.—G. W. BARENDSEN, Radio-Biological Institute of the National Health Research Council T. N. O., Rijswijk, Netherlands.

* W. H. Johnston, in Proceedings of the International Conference on Peaceful Uses of Atomic Energy, vol. 14, p. 149 (Columbia University Press, New York, 1955).

† Hl. DeVries, G. W. Barendsen, *Physica* **19**, 987 (1953).

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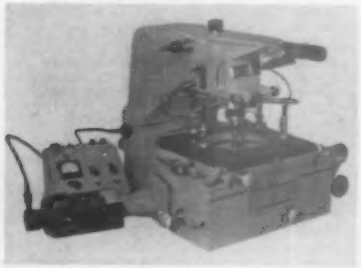

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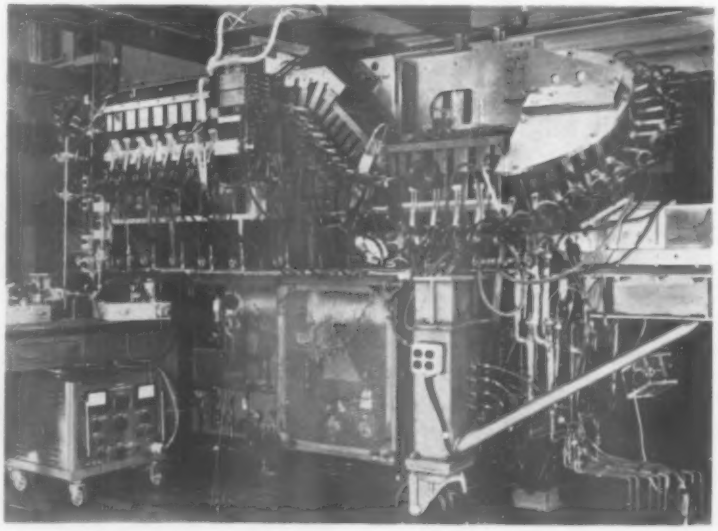
THERMONUCLEONICS

Stellarator Program Blooms at Princeton

True to the declassification policies set at the time of Geneva conference, the doors of Princeton University's Project Matterhorn, hitherto guarded (NU, Feb. '56, 42), were opened to the press last month. In addition to the impressive research program revealed (see below), there was one intriguing bit of news foretelling a bright future for thermonuclear power: Design studies of a power-producing Model D stellarator yielded a capital cost per kw "between fossil and fission plants." Unfortunately the size of plant tended to be very large—thousands of megawatts, it was implied. Nevertheless, these competitive capital costs are interesting to contemplate, especially when combined with the low fuel costs of fusion plants. Of course, this needs to be seen in perspective: the D study was very preliminary; later developments have tended to raise costs.

Present focus of the Princeton efforts is the Model C stellarator to be built by an Allis-Chalmers–RCA team and scheduled for low-power trials in late 1959. The $24-million device has impressive design statistics: it's to be in the form of a racetrack about 40 ft in circumference, the vacuum tube in which the plasma will be confined by the combination of solenoidal and helical windings will have an 8-in. diameter. The confining magnetic field, 50,000 gauss, is to be supplied on a



B-3 STELLARATOR uses figure-eight geometry backed up with stabilizing helical windings to confine plasma in 2-in.-dia stainless-steel vacuum evacuated tube

pulsed basis by three motor-generator sets equipped with 90-ton flywheels capable of delivering 200 Mw for 1 sec. Clearly this power is too high to supply on a steady basis and the machine will be pulsed about once every minute. Heating the plasma will be a combination of ohmic heating (using a 0.5-Megajoule capacitor bank to put 34,000 amp through the plasma) followed by a choice of magnetic pumping or ion-cyclotron resonance. This phase of the cycle will be capable of supplying energy at the rate of 50 Mw for many milliseconds. In this fashion it is hoped to reach temperatures of 100,000,000°—in sight of the ignition temperature for DD reactors and well beyond it for DT. However, it is not intended that the Model C be a power-producing device, nor even a prototype for one, rather it is a research facility.

Model C is only the latest in a long series of machines, built to test the stellarator principle, starting with the A machine in 1952 and culminating in the elegantly engineered B-3 (see figure). Among those in operation at present are A-2 (dubbed Etude), a bakable toroidal device with d-c magnetic field, used to study ohmic heating; Polonaise (companion to Etude) a linear device used to establish steady-state plasmas for research in diagnostics and plasma physics; B-55, a racetrack geometry with stabilizing helical windings underneath the main solenoidal confining windings, used to study ion-cyclotron-resonance heating.

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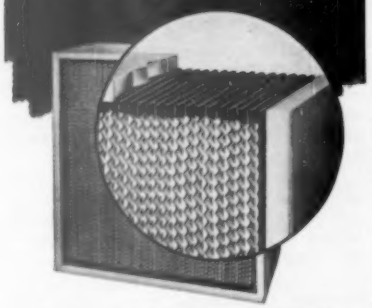

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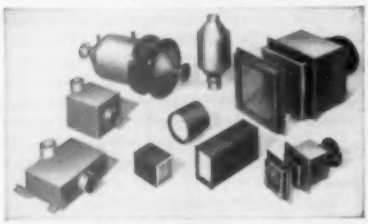

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Thermal Design Criteria

This article starts on page 130

ing linear changes in power level because of the feedback effects of boiling pressure drop.

These factors are intended only as a guide. Specific reactor conditions could justifiably alter these factors. For example, if a channel has an insignificant amount of bulk boiling, the uncertainty in the Martinelli-Nelson technique would have an insignificant effect in predicting the channel flow. For this reason, the F_s (1.10) due to the Martinelli-Nelson correlation could be eliminated. Conversely, for certain flow conditions and flux distributions, F_s could be higher than 1.10.

* * *

The authors wish to express their gratitude to the Westinghouse Electric Corporation and to the U. S. Atomic Energy Commission for permission to publish this work. An expression of gratitude is also appropriate to Mr. S. J. Green and members of the Bettis Thermal and Hydraulic Section for their efforts in obtaining the experimental information presented here. Assistance by the Bettis Information and Publication Group in the preparation of the manuscript is also acknowledged.

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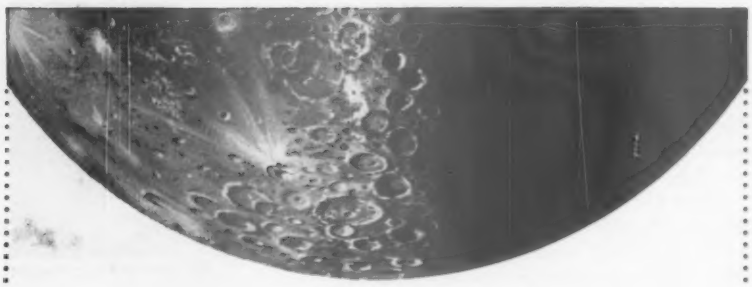

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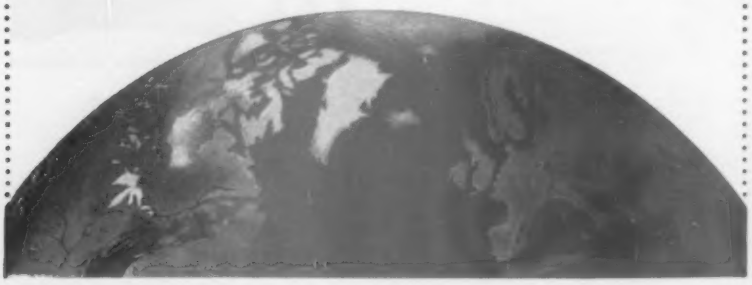

Oak Ridge Incident

This article starts on page 138

for the alarm sirens to reach audible speed. The first several seconds are the period of greatest danger to a criticality accident.

Since the emergency procedure specifies that personnel should leave by the nearest building exit and since the radiation monitors are not capable of pinpointing the site of an accident, the possibility exists that personnel could receive serious additional exposure if the source of radiation were near an exit. . . .

Conclusions

Causes of accident. This accident is not attributable to the action of any single individual, but rather, it arose out of a combination of circumstances involving the character of the facilities as well as the behavior of individuals.

An abstract, yet significant, contributing circumstance was the interim status of the enriched uranium recovery facilities as discussed in the section entitled "Findings." For example, the fact that the facilities for converting concentrated uranyl nitrate into uranium tetrafluoride were spread over three areas seriously compounded the communications problem. Furthermore, C-1 Wing had for years been operated under the principles of administrative batch control of nuclear safety. The extensive use during these years of equipment not of "nuclearly safe" dimensions due to its size and shape had previously conditioned plant personnel to the unchallenged acceptance of a 55-gallon drum in the leak testing of the C-1 Wing "safe" tanks with water.

In addition, the complete exchange of significant information among personnel was not assured, nor was the potential significance of several observations, now recognized as highly pertinent to the occurrence, adequately appreciated.

It is highly likely, if not certain, that the accident would not have occurred in the absence of any one of several factors. Among these are the use of the 55-gallon drum, the inadvertent flow of unidentified solution between areas, and the subsequent drainage of this solution into the 55-gallon drum without recognition of its composition.

It seems reasonable to conclude that the accident resulted largely from an accumulation of observable physical conditions which, though unknown in full to any individual at the time, should have prompted preventative action.

The committee also concludes that, although the environment in which this event took place and the performance of some individuals might have been improved, a nuclear accident will always be within the realm of possibility whenever potentially critical quantities of fissionable material are being handled.

Nature of accident. The accident took place as a result of the inadvertent introduction of concentrated uranyl nitrate solution into a 55-gallon drum. The energy release concomitant with the accident occurred during an interval of minutes in which the effective reactivity and the power level oscillated a number of times. The nuclear reaction was ultimately stopped by the additional flow of water into the drum. No solution was forcibly expelled from the drum during the power evolution, other

than an aerosol. It is evident from a review of the accident that very slight differences in any one of several controlling factors could have resulted in an energy release several orders of magnitude greater than that observed. The energy release was however, about ten times greater than that resulting from previous accidents of this type.

Emergency procedures. The emergency procedures previously established to provide for incidents of this nature and magnitude are considered to have been adequate. The number of people involved over large areas, as might be expected, introduced a degree of confusion, causing some delay. However, work progressed, information was, obtained and coordinated, and the basic principles of the emergency plan (that is, personnel evacuation, personnel monitoring, medical assistance, and radiation area isolation) progressed in a satisfactory manner.

Dosimetry. The sodium activation of the blood provided the best estimate of the radiation dose received by exposed personnel. The indium foil in the badges carried by the Y-12 employees enabled health physics personnel to quickly and efficiently identify highly exposed employees and make preliminary estimates of the magnitude of the doses.

Recommendations

It is recognized that extensive study and evaluation are required to improve existing radiation control practices and procedures if such action is to be taken without (a) establishing unduly rigid controls which would seriously interfere with operating efficiency, or (b) embarking on large expenditures for equipment and facilities which might be of only minor assistance in preventing or coping with a similar incident in the future. Accordingly, a study group, composed of representatives from AEC installations operated by the Union Carbide Nuclear Company and the Goodyear Atomic Corporation, has been established. Its mandate is to develop detailed recommendations regarding means of avoiding the occurrence of radiation emergencies and of providing adequate preparation for handling such emergencies if they do occur. Subjects being considered include: equipment design philosophy, operating procedures, nuclear safety education, radiation detection and warning devices, dosimetry, and emergency planning.

Nevertheless, the committee feels that, in keeping with the purpose of this investigation, the following general recommendations should be made at this time in the hope that they may be applicable and of value to other processors of fissionable materials.

Equipment design philosophy. Nuclear safety often can be enhanced without compromising economy by the extension of present control methods and, perhaps more significantly, by the utilization of other well-known nuclear concepts which thus far have not been extensively applied to production operations. Examples of these methods are included in the following recommendations:

1. Within the bounds of economic practicability, nuclear safety should be incorporated in the design of the equipment, taking full advantage of the characteristics of the material and process.

2. Within the same bounds of economic

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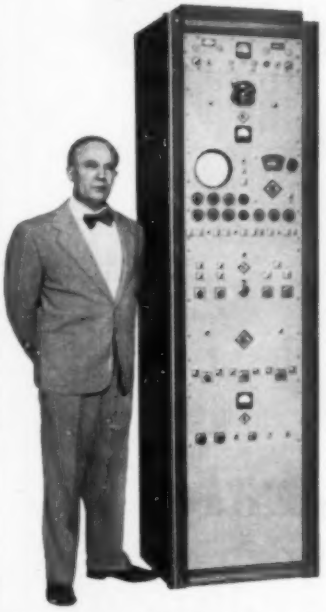

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Time Transmission Synchronized with WWV (mechanical cam) accurate to ..... 1/1000 second
Time Transmission by electronic seconds pulse (repetition stability) ..... 10 micro-seconds

OUTPUTS	Sine Wave	Pulse
	1 mc	1 mc
	100 kc	100 kc
	10 kc	10 kc
Single phase	1 kc	1 kc
3-phase	1 kc	
	100 cps	100 cps
Single phase	60 cps	10 cps
3-phase	60 cps	1 cps

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Gain Stability: Less than 1% for 10% change in line voltage
Gain Drift: Less than 0.25% per week (with regulated line voltage)
Output Voltage: ±100 volts (linear)
±140 volts (maximum)
Output Signal:
(a) Pulse width 1.2 microseconds
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Output Impedance: 17 ohms
Linearity:
(a) Differential 2.5%
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Power Requirements: 100—130 volts, 60 cycles
Weight: 35 pounds

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Oak Ridge Incident

This article starts on page 138

practicability, if materials of different isotopic enrichment are to be processed simultaneously or in campaigns in a single facility, the entire facility should be designed for the highest level of enrichment.

3. Transfers from a processing train which relies for nuclear safety on equipment construction to one which relies on administrative control should be avoided unless no practical alternative is available. These transfers, if made, must be conducted under extremely rigid control conditions. For example, no single analytical determination should be depended upon for the limitation of a batch size.

An investigation of the use of fixed neutron absorbers in process equipment to implement nuclear safety should be actively pursued. The properties to be investigated should include the necessary configuration and concentration of the absorbers and their mechanical and chemical stability. Information from such tests will allow future design decisions to be based on economic and technical considerations.

Operating procedures. The use of portable unsafe containers in operating areas incorporating "safe" processing equipment should be held to an absolute minimum.

The means of communication between shifts, between operating and maintenance groups, and between production and staff groups should be more highly formalized than is customary in the chemical industry.

Nuclear safety and health physics education. It is recommended that the importance of nuclear safety in fissionable materials processing plants be restated and re-emphasized periodically to all personnel working in the processing areas. Although primary dependence for nuclear safety lies in equipment or procedural restrictions, it is clear that only by creating a constant awareness of nuclear safety can unusual and unexpected circumstances be viewed in terms of their possible nuclear hazard.

Likewise, management and all plant personnel should be reinstructed periodically in the health physics aspects of potential nuclear emergencies.

Dosimetry and radiation detection. The incident has underlined the urgent need for personnel dosimeters at installations which handle fissionable materials. Records of dosimetric findings should be kept for each individual. Only by requiring that the best dosimetry available be employed routinely can one insure that accurate dose values will be obtained in case of accidents. It is recommended that a single personnel dosimeter packet be used.

1. The personnel dosimeter should be capable of measuring both the gamma and neutron dose. A film type badge dosimeter which fulfills these requirements is available. It contains the following: (a) A film sensitive to gamma energies ranging from a few milliroentgens to thousands of roentgens. (b) An NTA film pack and approximately 1 gram of sulfur for fast neutron detection. (c) Indium foil for rapid identification of individuals who received appreciable neutron doses. (d) Bare- and cadmium-covered gold foils for slow neutron detection (the gold permits scanning over several days).

Where economically feasible, Hurst

threshold detectors in addition to appropriate gamma detectors should be located at the various danger points. The threshold detectors would be used to establish the spectral distribution of neutrons in the neighborhood of an accidental excursion and the gamma detectors would aid in establishing the ratio of the gamma and neutron yields.

2. Sampling procedures should be established to determine neutron activation of the persons and possessions of exposed individuals. The activation of blood sodium . . . is particularly valuable in this connection. A whole body counter should be used for the scanning of large numbers of people and for the rapid assay of large volumes of low level liquids.

3. A competent, well-informed health physics group, vested with a reasonable degree of authority, is vital in properly coping with the aftermath of a nuclear accident.

Emergency planning. Any facility concerned with the processing of fissionable materials should have a detailed emergency plan. This plan should closely coordinate all plant emergency activities and, in applicable areas, close interplant coordination should exist. Trained local and plant emergency squads should be maintained, and the emergency plan should be given thorough testing and periodic review to maintain its adequacy.

As a minimum, this plan should ensure that adequate provisions are made for the following points:

1. Immediate alerting and evacuation of personnel.

2. Adequate communications including an information control center.

3. Prompt location of the affected area.

4. Location, monitoring, decontamination, and medical treatment of personnel involved in the incident.

5. Control of re-entry to the affected areas.

6. Adequate identification for prompt access of emergency personnel.

7. Mobilization of adequate transportation facilities.

Approach of near critical solutions by personnel. The following recommendation is made governing the approach of a near critical solution of U^{235} by personnel. The recommendation is based on the analysis of the effect on the solution reactivity of the neutron reflection by a simulated human body. . . . A vessel containing solution in which a nuclear accident has recently occurred should be approached no nearer than five feet, and the number of persons at this distance should be limited to one. This person should be equipped with both neutron and beta-gamma survey meters, the former of a type which is operative in a high-level gamma-ray field. If only a gamma monitor is available, a person should remain at the 5-foot distance a maximum of 10 seconds to avoid possibly incurring significant radiation exposure. This exposure is in addition, of course, to that from the delayed gamma rays which may impose additional limitations on the minimum approach distance. It is emphasized that this recommendation is applicable only to incidents stemming from nuclear excursions in aqueous solutions of fissionable materials. It does, however, include a safety factor of more than two on the result of the analysis.

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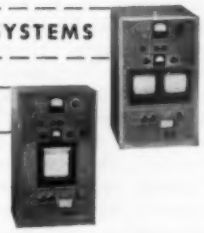

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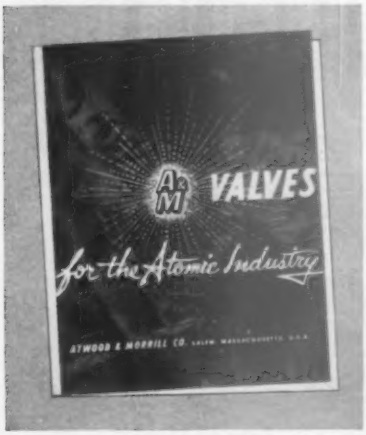

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BOOKS

Effects of Radiation on Materials

Edited by J. HARWOOD, H. HAUSNER, J. MORSE and W. RAUCH (Reinhold Publishing Corp., New York, 1958, v + 355 pages, $10.50).

Reviewed by D. O. LEESER, Atomic Power Development Associates, Inc., Detroit, Mich.

The effects of radiation on materials, like some people, are continual storm centers. The reason is that there is little information on the techniques, problems and pitfalls of radiation experiments; most of the knowledge remains with a few experimenters. In addition, it is difficult to correlate and to apply the available data without some understanding of the hidden variables that influence the evaluation of available results. Correlation of data between different experiments performed by different experimenters is one of the most difficult problems that confront the evaluator.

This book is a compilation of talks given at the colloquium, sponsored by the Office of Naval Research jointly with the Martin Co. at Johns Hopkins University in Baltimore, in March, 1957. Unfortunately, because of space limitations, the individual authors' names are not listed on the title page; it is they who deserve the credit for this compilation and evaluation of data. It becomes necessary, therefore, to list here the various authors: G. J. Dienes of Brookhaven National Laboratory, J. C. Wilson and D. S. Billington of Oak Ridge National Laboratory, M. Simmad of Johns Hopkins University, R. Smoluchowski of Carnegie Institute of Technology, H. Y. Fan and K. Lark-Horovitz of Purdue University, C. E. Weber of Knolls Atomic Power Laboratory, G. R. Henning of Argonne National Laboratory, M. Burton of Notre Dame University, A. Charlesby of Tube Investments, England, and A. J. Restaino of the Martin Company.

While these papers deal with the radiation stability of most materials that are used, or are contemplated for use in nuclear reactors, some theories and concepts of radiation effects, radiation sources and measurements of radiation are included. Emphasis, however, is placed on known effects of radiation on the metallurgical, physical, mechanical, chemical and electrical properties, and there is discussion of the current thinking on behavior of organic materials. This latter includes a paper on radiation-induced graft copolymerization.

The compilation constitutes a basic review of available information on the effects of radiation on materials and, as such, should appeal more to students and engineers who wish to broaden their education. The eleven chapters by leading scientists are well documented with 16 to 130 references each and an average of 60. In addition, the book includes the bibliography by Helen Friedemann with close to 800 references on effects of irradiation on solids. This latter has been divided into sections on theories, effects on metals and effects on nonmetals.

Basic scientists and designers will find it lacking in specific or detailed information since tables of data are conspicuously absent. It will also be obvious to the reader that much remains to be done to improve our knowledge of the radiation stability of materials, from both a theoretical and practical viewpoint. In many cases, a big question still remains: "Are the observed post-irradiation properties the same as during irradiation?" Results of some investigations throw serious doubt on the advisability of using post-irradiation measurements, particularly the behavior of fissionable components during irradiation. However, additional data are needed to confirm this doubt.

Les Centrales Nucléaires

By P. CHAMBADAL (Armand Colin, Paris, 1957, 188 pages).

Reviewed by GILBERT B. MELESE, Dept. of Mechanical Engineering, Columbia University, New York, N. Y.

This excellent pocket book on nuclear power plants is written by a thermodynamics expert from the Electricité de France. The different approaches to energy recovery between classical and nuclear plants are shown with great detail. However, a short chapter gives an idea of the problem of heat generation in a reactor and a second chapter offers a brief but very good introduction to reactor cooling. Organic liquids could have been mentioned there among the various possible coolants.

Various ways of recovering the heat produced in a nuclear reactor are studied in the third chapter where one finds theoretical considerations on optimum heat-exchanger temperatures;

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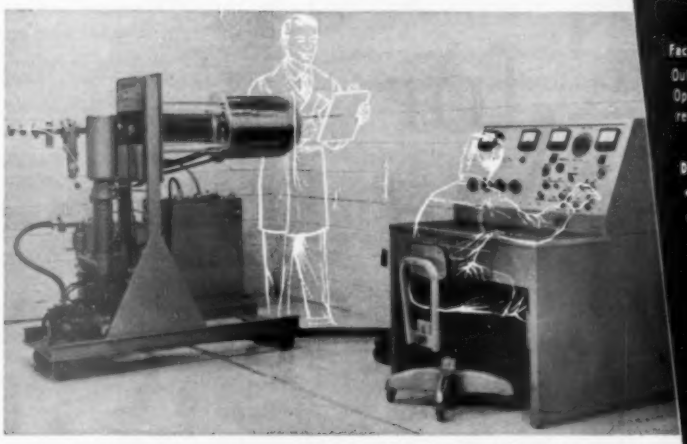

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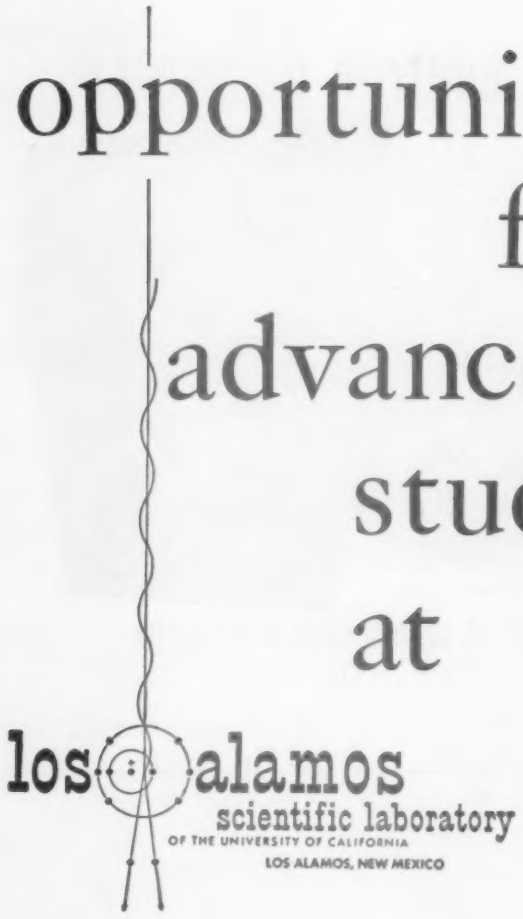

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steam production with boilers is thoroughly treated in chapter four—useful work (per unit mass of hot water) is plotted against water temperature for various boilers. The power plant of the French dual-purpose G1 reactor is described as an example of this type of energy recovery.

In the fifth chapter, the author studies a more classical way of raising steam in a heat exchanger where feed water is first heated, then evaporated (and sometimes also superheated). After general remarks on the temperature-enthalpy diagram, the case of gas-cooled reactors is more specially developed. (Liquid metals are stated as having small temperature rises in reactors; this is contradicted later for the SGR reactor, where this rise is given as 236° C.) Optimum conditions for either one or several steam pressures are derived both for an open or a closed gas cycle. The influence of feed-water heating is also considered in some detail.

Several reactors are described in chapter six with data on their power plants—the Moscow 5-Mw(e) reactor, Shippingport, SGR, Enrico Fermi Fast Breeder, Calder Hall and Marcoule's G2 and G3. A great amount of information is condensed in this chapter with very few misprints, such as the fuel loading of the Fast Breeder, the coolant-channel diameter of Calder Hall or the final loading of G2 (with two different types of uranium rods).

Various possible steam cycles for boiling-water reactors are dealt with in chapter seven, which contains a description of EBWR and also references to Dresden's power plant and D_2O reactor designs. The possible advantages of combining nuclear and "fossile" fuels is considered in the eighth chapter either for both evaporation and superheating or for superheating only; Indian Point's reactor is presented as an example of the second possibility.

The last chapter covers the various possible uses of gas turbines in connection with power reactors. Several gases are compared as far as turbine and compressor designs are concerned. The 60-Mw(e) helium turbine design study by American Turbine Corp. is described in some detail.

In summary, this very clear little book is a good and rather sophisticated introduction to the special problems encountered in nuclear power plants. It can be read with profit by any student in either nuclear or power engineering. In spite of its slight emphasis on gas cooling, this French text

would be very valuable in any country and would definitely deserve to be translated.

BOOKS RECEIVED

Nuclear Structure, by Leonard Eisenbud and Eugene P. Wigner (Princeton University Press, Princeton, 1958, viii + 128 pages, $4). The material in this book was originally prepared as a section for the large "Handbook of Physics," which McGraw-Hill published in September, 1958. Instead of compiling a treatise on nuclear theory, the authors have tried to present a survey of nuclear models, comparing the assumptions and consequences of various theories. The mathematical foundations of the various models are not developed in detail.

Progress in Elementary Particle and Cosmic Ray Physics, vol. 4, J. G. Wilson and S. A. Wouthuysen, editors (Interscience Publishers, New York, 1958, xii + 470 pages, $12.50). The scope of the earlier volumes in this series was limited to cosmic-ray physics, but the latest volume includes articles on some aspects of elementary particle physics that touch on cosmic-ray studies. The book's five papers consist of one on K-mesons, one on μ-mesons, one on theory of interactions of new particles, and two on cosmic radiation (origin and time variations).

Nuclear Masses and their Determination, H. Hintenberger, editor (Pergamon Press, New York, ix + 267 pages, $14). This book presents the proceedings of a conference held in the Max Planck Institut für Chemie in July, 1956. The introduction is a paper on *The Present Status of the Determination of Nuclear Masses,* and subsequent papers discuss a wide range of theory and experiment, including nuclear models, mass-spectroscopic results, nuclear reactions and instruments.

Bone and Radiostrontium, by A. Engstrom, R. Bjornerstedt, C. J. Clemedson and A. Nelson (John Wiley & Sons, New York, 1958, 139 pages, $8.75). This lengthy monograph presents a thorough study of radiostrontium from the standpoint of bone physiology; the skeletal distribution of strontium and its substitution for calcium in bone structure is considered in some detail. The last chapter is a mathematical treatment of

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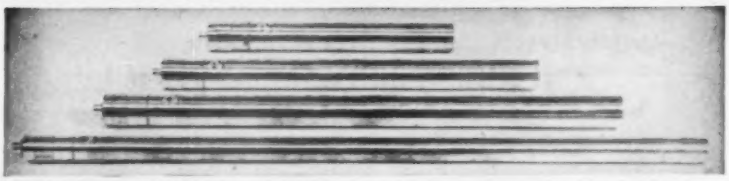

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G-10-5	1" x 9"	4½"	1500	1800	2000	2200	2050*	115.	100.
G-10-12	1" x17"	12"	1500	1800	2000	2200	2050*	125.	110.
G-10-20	1" x25"	20"	1500	1800	2000	2200	2050*	135.	120.
G-15-12	1½"x17"	12"	1700	1950	2150	2350		140.	125.
G-15-34	1½"x39"	34"	1700	1950	2150	2350		190.	175.
G-15-34A*	1½"x41½"	34"	1700	1950	2150	2000*		190.	175.
G-20-12	2" x17"	12"	1900	2100	2300			160.	140.
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D-10-5	1" x 9"	4½"	1050	200 v.	2%	10^8	20.
D-10-12	1" x17"	12"	1050	200 v.	2%	10^8	25.
D-10-20	1" x25"	20"	1050	200 v.	2%	10^8	25.
D-15-5	1½"x 9"	4½"	1100	300 v.	1%	10^9	25.
D-15-12	1½"x17"	12"	1100	300 v.	1%	10^9	25.
D-15-20	1½"x25"	20"	1100	300 v.	1%	10^9	30.
D-15-34	1½"x39"	34"	1100	300 v.	1%	10^9	30.
D-20-12	2" x17"	12"	1200	300 v.	1%	10^9	30.
D-20-20	2" x25"	20"	1200	300 v.	1%	10^9	35.
D-20-30	2" x35"	30"	1200	300 v.	1%	10^9	40.
D-20-38	2" x43"	38"	1200	300 v.	1%	10^9	45.
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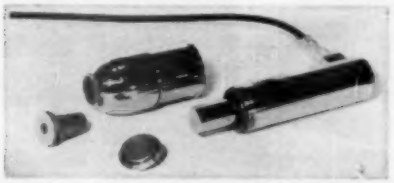

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By FRANK A. ROUGH *and* ARTHUR A. BAUER, *Battelle Memorial Institute*

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THE TRANSURANIUM ELEMENTS *354 pp., 73 illus., 1958—$7.00*
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Electronic Semiconductors, by Eberhard Spenke (McGraw-Hill, New York, 1958, xxvi + 402 pages, $11). This systematic and detailed introduction to semiconductor physics is a translation of the second German edition of "Elektronische Halbleiter." The first part of the book describes basic concepts important in semiconductor theory such as impurities, the hole and the conduction mechanism. The second part of the book deals with the quantum mechanics of the hydrogen molecule, the band model, Fermi statistics of electrons in a crystal, imperfection equilibria and boundary layers in semiconductors.

Actions Chimiques et Biologiques des Radiations, vol. 3 (Masson et Cie, Paris, 1958, 222 pages, paper, 4,000 fr, cloth, 4,800 fr). Three French papers are presented on (1) Ionization of Organic Liquids, (2) Primary Polymerization by Ionizing Radiation, and (3) Effects of High-energy Radiation on Polymers. **Vol. 4,** Les Peroxydes Organiques en Radiobiologie (148 pages, paper, 2,800 fr, cloth, 3,600 fr). The proceedings of the first Colloque sur les Peroxydes Organiques Formes par Les Radiations et leur Role en Radiobiologie at the Institut du Radium in Paris (1957) are presented here in their original languages—slightly more than half of the papers in French, the rest in English.

Modern Computing Methods, by the staff of the Mathematics Division, National Physics Laboratory, Harwell (Philosophical Library, New York, 1958, vi + 129 pages, $8.75). This series of lectures by the NPL staff at Harwell gives brief accounts of computing methods likely to be of use in solving problems in physics, mathematics and engineering. There are chapters on algebraic equations and matrices, finite difference methods, ordinary and partial differential equations and, in addition, an extensive bibliography.

Atomic Physics and Human Knowledge, by Neils Bohr (John Wiley & Sons, New York, 1958, viii + 101 pages, $3.95). In a series of speeches, articles and one chapter from a book, Neils Bohr presents some of his ideas on the niche of physics in the structure of general knowledge. The accent is

primarily on epistemology, secondarily on atomic physics.

Annual Review of Nuclear Science, vol. 7, James G. Beckerley, editor (Annual Reviews, Palo Alto, 1957, vii + 496 pages, $7). This volume, as its editors put it, "begins with mesons and ends with mesons." The first article is *Mu-Meson Physics*, by J. Rainwater; the last, *Hyperons and Heavy Mesons*, by M. Gellman and A. H. Rosenfeld. But although these two articles represent a hundred pages on mesons, even more space is dedicated to presenting material on high-energy electron reactions and to collective model theories for neutrons. There are also four shorter articles on radiobiology, with emphasis on the lethal action and pathology of radiation exposure on vertebrates. The volume presents two papers on radiochemistry, one on separations by ion-exchange, and one on equipment for high-level processes. Finally, there is a paper on collision of high-energy particles.

Solid State Physics: Advances in Research and Applications, Vol. 4, Frederick Seitz and David Turnbull, editors (Academic Press, New York, 1957, xiv + 540 pages, $12). This book contains two very long sections, one on *Ferroelectrics and Antiferroelectrics*, and one on the *Theory of Mobility of Electrons in Solids*. There are two shorter chapters, *Orthogonalized Plane-Wave Methods* (for solving the Schrödinger equation) and *Techniques of Zone Melting and Crystal Growing*, as well as a lengthy *Bibliography of Atomic Wave Functions*.

Principles of Modern Physics, by A. P. French (John Wiley and Sons, New York, 1958, viii + 355 pages, $6.75). How much can a senior or a first-year graduate student chew, and what can one do to make him want to chew it? This stimulating survey addresses the problem by handing him short and readable chapters on the atom, electromagnetism, relativity, quantum mechanics and the nucleus. The purpose is to gain perspective, to put the pieces together in a whole, to lead the embryonic physicst forward by showing him glimpses of the rooms of the mansion. Teacher and student will find an interesting review and an interesting introduction to material that has taken on new significance in recent decades.

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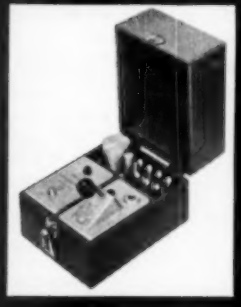

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LETTERS

Fast Breeders for Power

DEAR SIR:

To Dr. Weinberg's thought-provoking editorial, "Power Breeding As a National Objective" (NU, Aug. '58, p. 75), there can be added other objectives particularly pertinent to the fast breeder that appeal to those of us interested in fast reactors as a source of economic power. The subject warrants further discussion.

Ours is a power-dependent economy, and low-cost power will play an important role in its continued growth. The development of breeders can and should be justified on the basis that these have the potential of low-cost power *because they breed* and hence after the initial fuel inventory are independent of costly diffusion and/or heavy-water plants. The success of the Navy development of nuclear propulsion and the Army's APPR, particularly with increasing current interest in the Arctic regions, plus other programs underway, indicates an increasing demand for enriched fuels for special-purpose reactors. The present diffusion plants probably can meet both these needs and those of commercial nuclear power for the next few years with little strain. However, not too far in the future, another source of enrichment must be developed. Adding the cost of additional diffusion-plant capacity, particularly if the full costs are charged, would seriously handicap the realization of low-cost nuclear power.

As a nation, we have historically championed and currently are fighting hard to preserve a way of life based on private industry. The fast breeders are the solution to nuclear power that can ultimately be independent of all facilities that are so costly that they must be government-owned, e.g., diffusion and/or heavy-water plants. Complete reliance on a civilian nuclear-power technology based on U^{235}-enriched fuels could gradually lead to a government dictatorship over our nation's power industry by its dependence on a government-owned fuel supply. To nations other than the U. S. A., ultimate freedom from a dependence on our diffusion plants is mandatory for the preservation of their autonomy.

Sodium-cooled fast breeders can achieve high thermal efficiency, with potentially low capital costs per in-

stalled kilowatt. Even with the conservative design approach that must be taken at this stage of development, The Detroit Edison Company's studies indicate that it probably is possible now to construct a fast reactor that *is competitive* with other types. In addition, the low pressure requirements of the primary system, the absence of potential exothermic chemical reactions (in these systems), and the required small margin of excess reactivity are some of the factors that make the fast reactor an inherently safe reactor. Thus a wide latitude in the selection of locations near load centers is predicted as soon as their practicability has been demonstrated with the EBR-II and the Enrico Fermi Plant.

Although little has been done to exploit this potential advantage, fast reactors have a considerable degree of flexibility in their use of available neutrons for the production of valuable by-product materials. In addition to production of Pu and U^{233}, available neutrons can be used for the production of many valuable radioisotopes. The reactor plant could also be used as an irradiation facility. This capability will facilitate their rapid adjustment to our dynamic and ever-changing economy. Some authorities believe this to be potentially as important as power production.

In defense of the current emphasis of mills/kwhr as the prime criterion of performance, one reason why the U. S. economy is the most dynamic in the world's history is *because we are concerned with cost.* The urge to reduce unit costs on every component of this economy—be it a bushel of wheat, a ton of steel or a kilowatt-hour of electricity—is the driving force that makes Americans continually strive to develop better and cheaper methods of production and distribution. We strive to use our resources of land, water, minerals and available manpower to their best advantage—dictated by the requirements of the current economy and our prediction of its future pattern of change. There is no substitute for this very basic and all-important American trait.

The full utilization of our resources of uranium *is* an important objective, and we feel this can be accomplished in the fast reactor without sacrifice of its competitive position with coal or any other reactor system.

—Russell E. L. Stanford
Nuclear Power Development Department
The Detroit Edison Company
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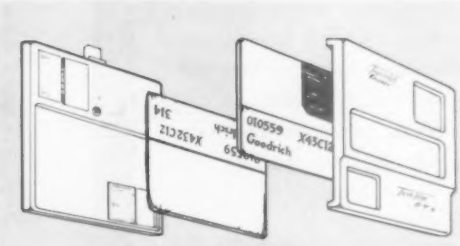
Products & Materials

Portable Pool-Type Reactor ➡

New Film-Badge and Service

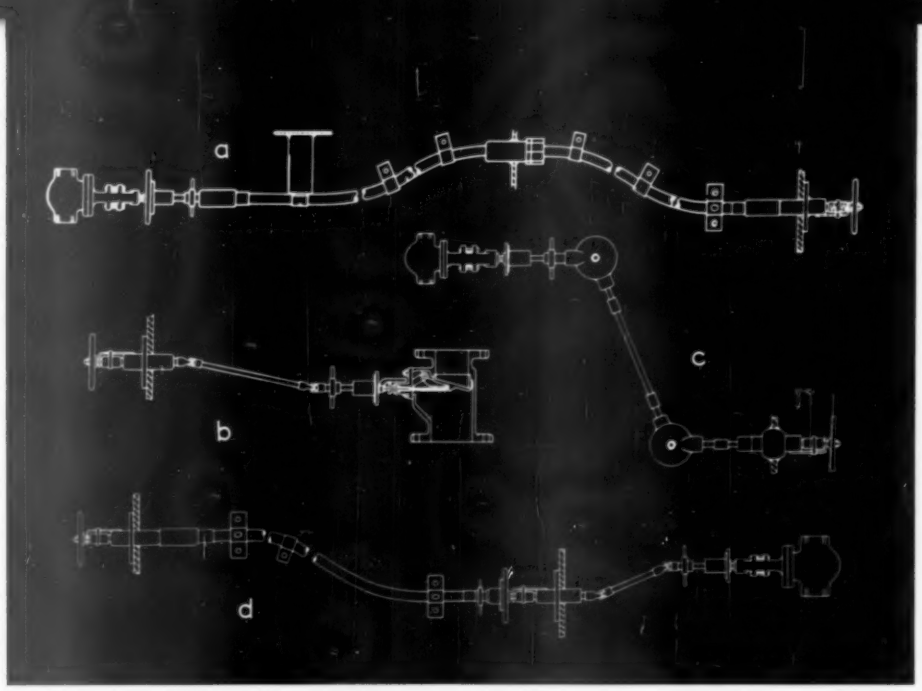


New Film-Badge and Service

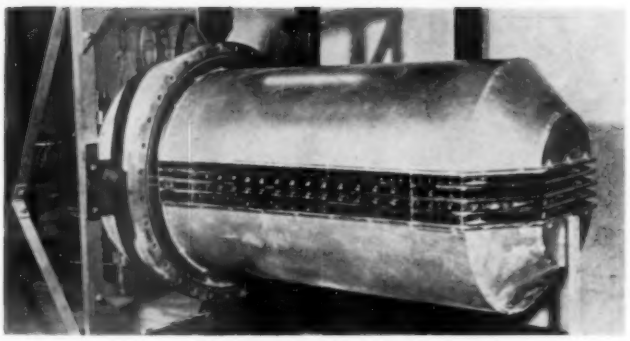
A new film-badge and service, called Twin-film, provides the wearer with a record of his accumulated exposure over a 13-week period as well as weekly. Cumulative service was suggested by the latest recommendations of the National Committee on Radiation Protection (3-rem maximum permissible whole-body dose in a 13-week period). Because conventional badges do not read doses lower than 20 mr/week, weekly reports might not indicate correct exposure for a 13-week period. The new badge holds two films: one is a color-coded weekly film; the other is a 13-week cumulative film. The cumulative readings can indicate doses as low as ¾ mrem/week of low-energy X-rays, 1½ mrem/week of high-energy X- and γ-rays and 4 mrem/week of β-rays. For over-exposures, the film can be read to about 10 r for X-rays, 50 r for γ-rays and 100 r for β-rays. The service is also available for neutron exposures. Latent-image fading has been overcome in the 13-week cumulative film by a newly developed sealing process. The identity of each badge user is printed on the film by means of lead foil and X-rays.—Tracerlab, Inc., 1601 Trapelo Road., Waltham 54, Massachusetts.

Portable Pool-Type Reactor

The AGN-211, "poly pool" reactor, incorporates many of the features of the AGN-201 (NU, Sep '56, p. 100) and has a readily accessible, visible core lattice with fuel elements made of 20%-enriched-UO_2 particles imbedded in radiation-stabilized polyethylene. It is designed to operate at a continuous power level of 1 watt and, with slight modification, up to 100 watt. The inherent safety of the polyethylene elements, even for reactor-transient periods as low as 4–6 msec, is based primarily on the arrangement of the fuel within the moderator. The homogeneous dispersal of UO_2 particles results in a negligible time delay in the transferral of heat from fuel to moderator. The prompt heating of the moderator increases the average thermal energy of the neutrons, which results in a decreased fission-to-capture probability. Furthermore, the prompt expansion in the fuel elements causes a decrease in the density of the moderator, which increases the leakage of neutrons out of the core. The net result of this prompt heat transfer process is that the reactor shuts down harmlessly. Two safety and two control rods are provided, however. Both safties and the coarse control rod consists of cadmium in a steel blade; the fine rod is of stainless steel. The core consists of ten fuel elements surrounded by 32 graphite reflector elements. The



Remote Valve Operators



New-Type Particle Accelerator

control rods fit into the core in such a manner that they cannot be removed without removing at least one fuel element. A 1-in.-diameter "glory hole" extends vertically through the center of the core. Shielding in the radial direction is provided by 40 in. of ordinary concrete in the form of blocks that overlap. Shielding in the vertical direction is provided by 6 in. of graphite, 2 in. of lead and 4½ ft of water.—Aerojet-General Nucleonics Div., Aerojet-General Corp., P. O. Box 77, San Ramon, Calif.

Remote Valve Operators

Radiation environments have made remote valve operators a necessity. In figure, (a) is flexible-shaft installation. These can be used in lengths up to 100 ft and can be made to go around a large number of bends. In center (b) is simple reach-rod and universal-joint installation. This type is often used where only slight offset is made and in short lengths. Also in center (c) is geared-joint installation that can be operated at any angle up through 300 deg. These are used where bends are too sharp for flexible shafting. Last (d) is Flexible-shaft-and-reach-rod combination. In this installation, a separate handwheel is placed between the flexible shaft and reach rod with quick-disconnect coupling to enable the valve to be operated at this point if necessary.—Stow Manufacturing Co., 443 State St., Binghamton, N. Y.

New Type Particle Accelerator

The Dynamitron (shown above with housing removed) is a new concept in high-voltage particle accelerators. It is distinguished by its very large beam output at constant potential—as much as ten times more beam current for the same capital investment is claimed. The manufacturer estimates that the total radiation cost for the Dynamitron will be 0.30–0.40 $/kwh depending on whether the 1-Mev, 12-kw or 2-Mev, 24-kw model is used. It converts low voltage a-c power to high voltage d-c power by means of cascaded-rectifier systems driven in parallel by an r-f oscillator. The rectifier array is positioned between, and spaced apart from, a pair of large curved electrodes that form the tuning capacitance of the r-f oscillator. The strong alternating field between electrodes induces intermittent currents through the series-connected rectifiers, thereby building up a large constant potential at the end of the array. The interelectrode capacitance of the rectifier tubes, plus the surface capacitance of the corona shields attached to each rectifier junction, provide adequate ripple control at the operating frequency.—Radiation Dynamics, Inc., 1800 Shames Dr., Westbury, L. I., N. Y.

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PRODUCTS & MATERIALS

Department starts on page 212

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Fluorimeter

Model Fl-500 uranium fluorimeter is transmission type. Range is 10^{-9}–10^{-5} gm of uranium and below.—Ball Brothers Research Corp., Boulder, Colo.

Microwave Oscillators

Model 814 ultra-stable, microwave oscillator as sources for microwave spectrometer system covers frequency range from 2,500–17,500 Mc/sec. It is particularly adaptable to paramagnetic absorption techniques because short-term stabilities of 5 parts in 10^8, and long term stabilities of one part in 10^6, are readily achieved at high output power levels. Model 817 covers 23,000–25,000 Mc/sec band of ammonia spectrum.—Laboratory for Electronics, Inc., 75 Pitts St., Boston, Mass.

Whole-Body Scanner

Model CE-15 Scintiscanner whole body scanner (above) automatically moves scintillation detector over patient and graphically records radioactivity in body. It will examine body areas up

to 25 in. by 65 in. during single scanning operation.—Tracerlab, Inc., 1601 Trapelo Rd., Waltham 54, Mass.

Thermocouples

AerOpak thermocouples operate in temperature range of from −400–2,000°, have diameters of 0.025–0.313 in., can be bent to shape, can have weldments performed directly on them, are pressure tight to 50,000 psig.—Aero Research Instrument Co., 315 N. Aberdeen St., Chicago 7, Ill.

Dose-Level Alarm

Gammalarm (above) is warning device that responds directly to radiation at level as low as 3 mr/hr. Warning can be flashing lights, ringing bells and locking all doors to working areas.—Picker X-Ray Corp., 25 S. Broadway, White Plains, N. Y.

BF_3 Counter

Model NC-1 features subminiature preamplifier attached to BF_3 detector. Paraffin-filled, cadmium-lined cylinder moderates fast neutrons and discriminates against thermal neutrons. Fast-neutron energy response is "flat" from 100 kev–5.0 Mev. Fast-neutron sensitivity is 560 cpm for Po-Be neutron flux.—Tullamore Electronics Laboratory, 6055 S. Ashland Ave., Chicago 36, Ill.

Metallurgical Scanner

Vertical floating-zone scanner permits easy material and seed centering because top and bottom holders are adjustable in both horizontal and vertical direction. Separate top and bottom adjustment is provided for centering quartz protection tubes up to 35 mm o.d.—Lindberg Engineering Co., 2450 W. Hubbard St., Chicago 12, Ill.

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Consotrol, completely solid-state control instrumentation, consists of transmitters, recorders, controllers, and

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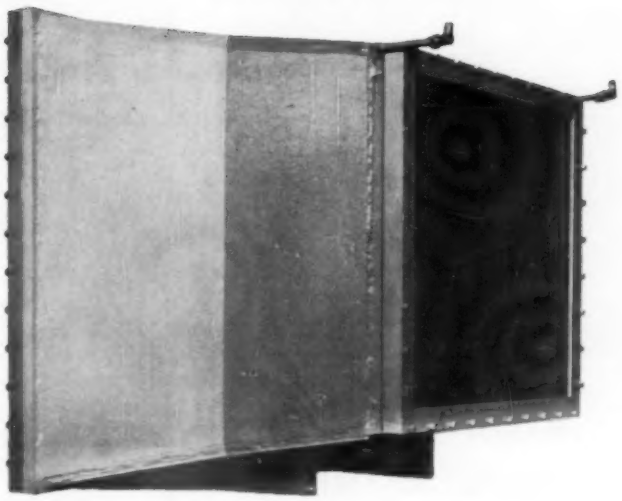

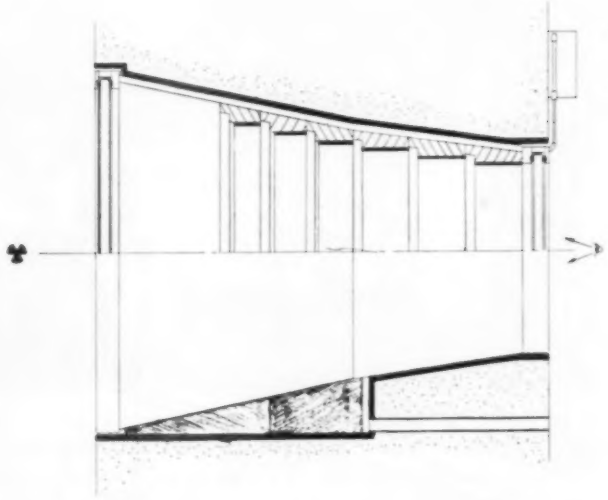

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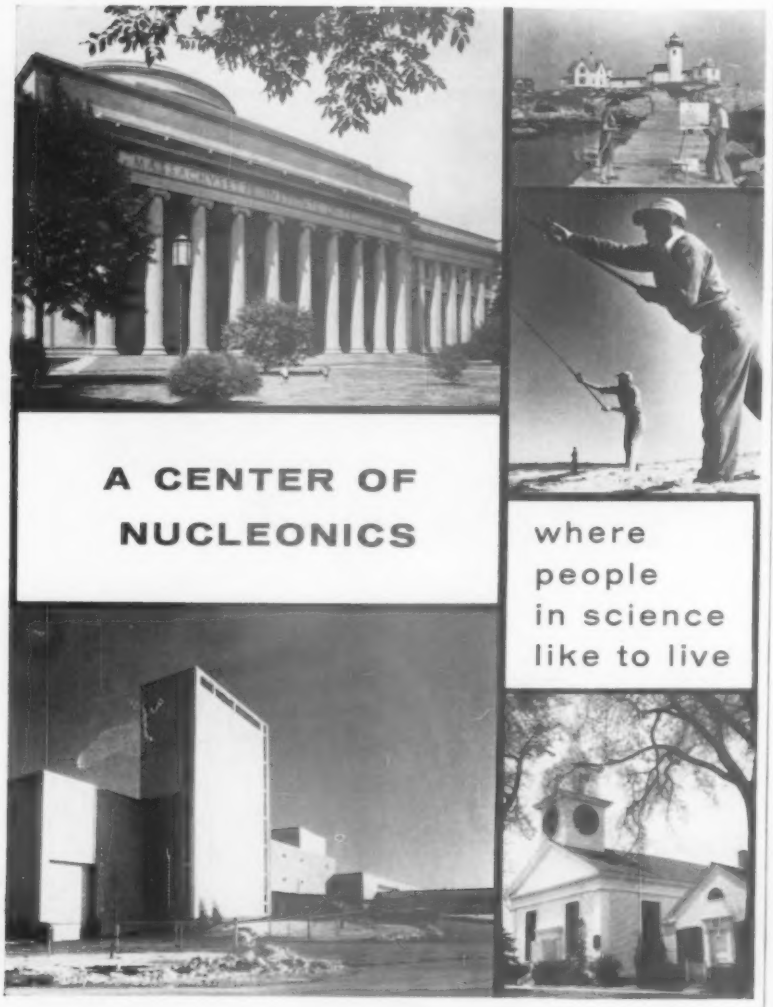

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PRODUCTS & MATERIALS

Department starts on page 212

valve operators, covering every function in process-control loop. Features include use of magnetic amplifiers and transmitters, choice of motion-balance or force-balance transmitters.—The Foxboro Co., Foxboro, Mass.

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Diagnosis, Therapy Unit

Isolab (above) basic system consists of mobile cabinet console, counterbalanced arm that rotates 360 deg in any plane, transistorized scintillation counter and decade scaler. Additional instruments available are dual count-rate meter, linear count-rate meter, matching second arm and counter, pulse-height analyzer, binary scaler well counter and G-M counters that are interchangeable with scintillation counter.—Nuclear Measurements Corp., 2460 N. Arlington Ave., Indianapolis 18, Ind.

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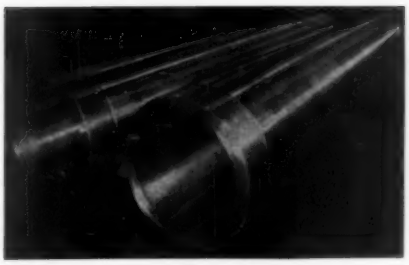

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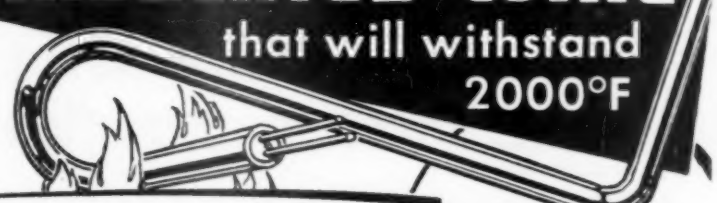

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Scintillation Counter

Model N-372 scintillation counter (above) consists of 2-in. lead shield mounted on cast-aluminum base that contains wired socket for 6292 DuMont photomultiplier tube and high-gain feedback preamplifier.—Hamner Electronics Co., Inc., P. O. Box 531, Princeton, N. J.

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NaI(Tl) crystals up to 7 in. in diameter can be supplied from full ingot diameter down to any given thickness.—National Radiac, Inc., Dept. 20, 479 Washington St., Newark, N. J.

Portable TV Camera

Miniature TV camera (above) 2.6 in. square by 7.5 in. long and weighing 2.5 lb with standard lens, can be easily maneuvered by standard mechanical manipulator. Camera has high resolution of 600 lines and its amplifier is flat to 8 Mc. No transistors are used, and it has successfully operated at radiation levels of 10^8 r with no effect on picture. —Photo Research Corp., 837 N. Cahuenga Blvd., Hollywood 38, Calif.

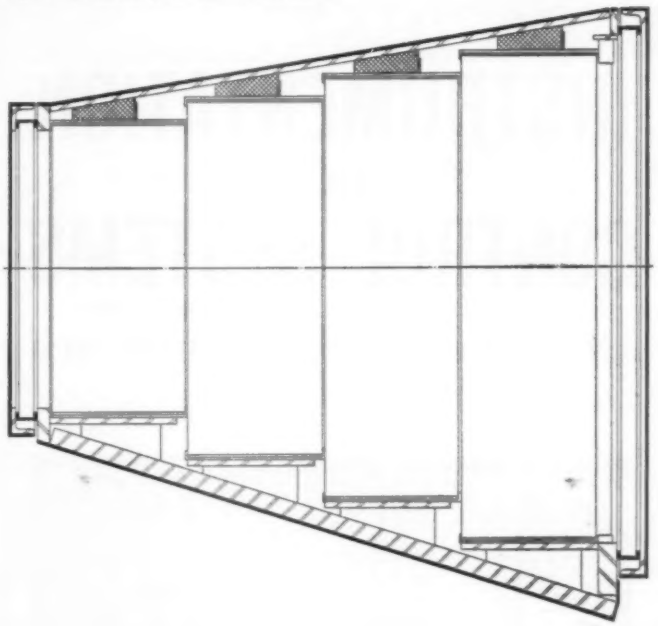
Scaler

Model 131A is cold-cathode glow-tube scaler designed for integral pulse-height analysis in scintillation or proportional counting. Featuring seven-decade capacity and built-in timer, Model 131A contains ultralinear, ultrastable expander-amplifier-type pulse-height selector with resolving time of less than 5 μsec and electronic scale-of-1,000 followed by four-digit electromechanical register.—Baird-Atomic, Inc., 33 University Rd., Cambridge, Mass.

Gamma Recorder

Gamma Intensity Time Recorder (GITR) is portable battery-operated, transistorized, ion-chamber instrument (above) that, unattended, records on magnetic tape time and intensity of gamma radiation. GITR is designed for use in periods of either 12 or 60 hr between tape reloadings. Data is recorded on three tracks of ¼-in.-wide tape, 900 ft long. First track records

Tapering the design of this Corning radiation shielding window housing makes it lighter—easier for you to handle and install.



NEW

Tapered window for hot cells installs faster and easier

To make it easier to install your hot cell window, Corning has developed this new tapered housing design.

The tapered design cuts off excess weight, makes the window easier to handle. Molding of the hole in your hot cell is simplified. And grooves in the housing and casing help guide the window accurately into place.

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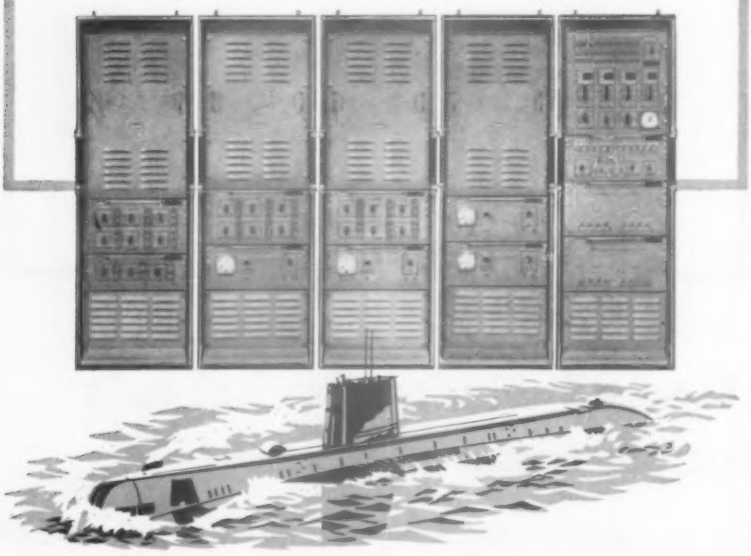

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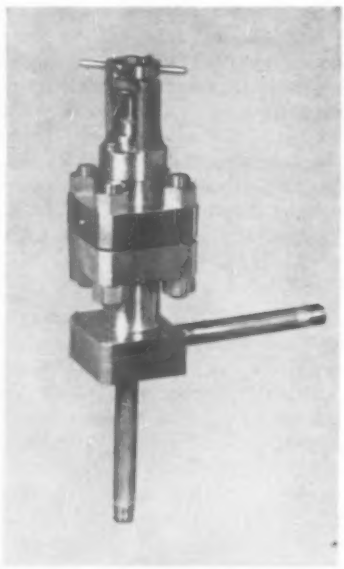
one pulse for each roentgen; second track records one pulse for each 1,000 roentgens; third track records 16 pulses/min and serves as time reference. Instrument is accurate to 15% over 0.2–2-Mev and covers dose-rates of 0.1–100,000 r/hr.—Land-Air, Inc., 7444 W. Wilson Ave., Chicago 31, Ill.



Bellows-Seal Valves

More than 180 bellows-sealed, packless valves like the one pictured above were delivered to Oak Ridge for the Homogeneous Reactor Experiment—2. About 60 were used in the reactor plant and 30 in the fuel-processing plant; the remainder were held as spares. A special process was developed to form the bellows from stainless steel in three plies rather than one or two. This meant first forming three tightly fitted, concentric tubes and then corrugating their walls to close tolerances. Each valve body (Type 347 SS) was X-rayed, to check for faulty welds and porous forgings, and leak tested at 2,000 psi. Stem-seal and seat leakage were less than 500 cm^3 of nitrogen/24 hr at 2,000 psi and 212° F.—Fulton Sylphon Div., Robertshaw-Fulton Controls Co., 2400 Cumberland Ave., Knoxville, Tenn.

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Service for monitoring X-ray radiation can be purchased on subscription basis for 1-yr periods. Once every two weeks new dosimeter film is forwarded

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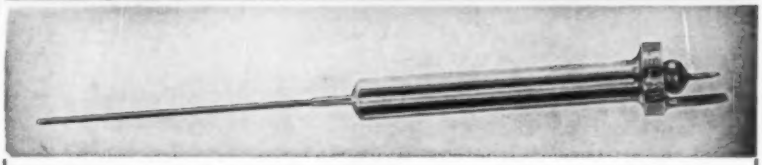

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Except for a glass bead insulator, Lelab Counter Tubes are constructed entirely of metal. The metal cylinder is used both as the envelope and the cathode.

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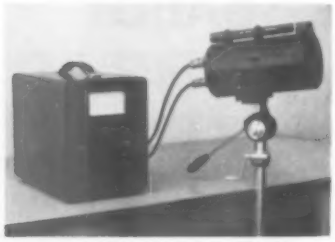
to subscriber and exposed film returned for processing. Written report is returned to subscriber within 72 hr after receipt at laboratory. In event of overexposure, telephone call is made direct to individual concerned.—X-Ray Monitoring Corp., 1947 Broadway, New York 23, N. Y.



Radiometer

Thermodot radiometer (above) measures thermal radiation from surfaces at ambient temperatures to 3,500° C. Infrared pulses as short as 6 μsec can be measured. Instrument is adapted to remote temperature measurement in hazardous radiation environments. Built-in control maintains target at any preset temperature. —Radiation Electronics Corp., 8241 N. Kimball Ave., Skokie, Ill.

Thickness Gage

XactRay thickness gage converts variations in transmitted energy into thickness variation in mils and tens of mils from thickness on which gage is zeroed.—Industrial Gauges Corp., West Englewood, N. J.

Welded-Metal Bellows

Welded-metal bellows assemblies (above) range in size from ¼–18 in. o.d.; are available in metals such as 300- and 400-series stainless-steel, Inconel-X, Ni-Span-C, titanium, zirconium, etc. Bellows can be designed with flat, spherical, stepped and other specially shaped plates as thin as 0.003

in. with ±0.0001-in. tolerance.—Bridgeport Thermostat Div., Robertshaw-Fulton Controls Co., 155 Hill St., Milford, Conn.

Temperature-Control System

Model TLC-3297 is three-channel warning and control system operating from signals produced by resistance-probe sensing elements. System consists of test chassis with plug-in limit controllers, magnetic alarm amplifier and power supply and can accommodate up to 100 channels. Specifications: Linearity from 0–50° C is within 0.5° C, from 50–150° C is within 0.25° C, from 150–200° C is within 0.25° C; range, each limit controller, from 90–180° C; accuracy is within ±1.6° C of set point; reproducibility of trip signal is ±1.1° C over 2-hr period and ±5° C ambient variation over any part of specified range; response time is 0.8 sec.—Arnoux Corp., 11924 W. Washington Blvd., Los Angeles 66, Calif.

Survey Meter

Model N858M radioactive-gas survey meter (above) is composed of 650-cm³ ionization chamber, blower and self-contained storage battery. Ion current is indicated on meter relay that can be adjusted to actuate internal alarm buzzer at any predetermined level. Internal storage battery is capable of 12 hr continuous operation. Instrument has half-scale deflection sensitivity to 1, 10, 100, or 1000 μc of tritium per liter of air. Gas-flow rate is 325 liters/min.—Levinthal Electronic Products, Inc., Stanford Industrial Park, Palo Alto, Calif.

Remote Monitor

Model 711 remote radiation monitor operates normally on 115 v, 60-cycle a-c but switches automatically to 12-v

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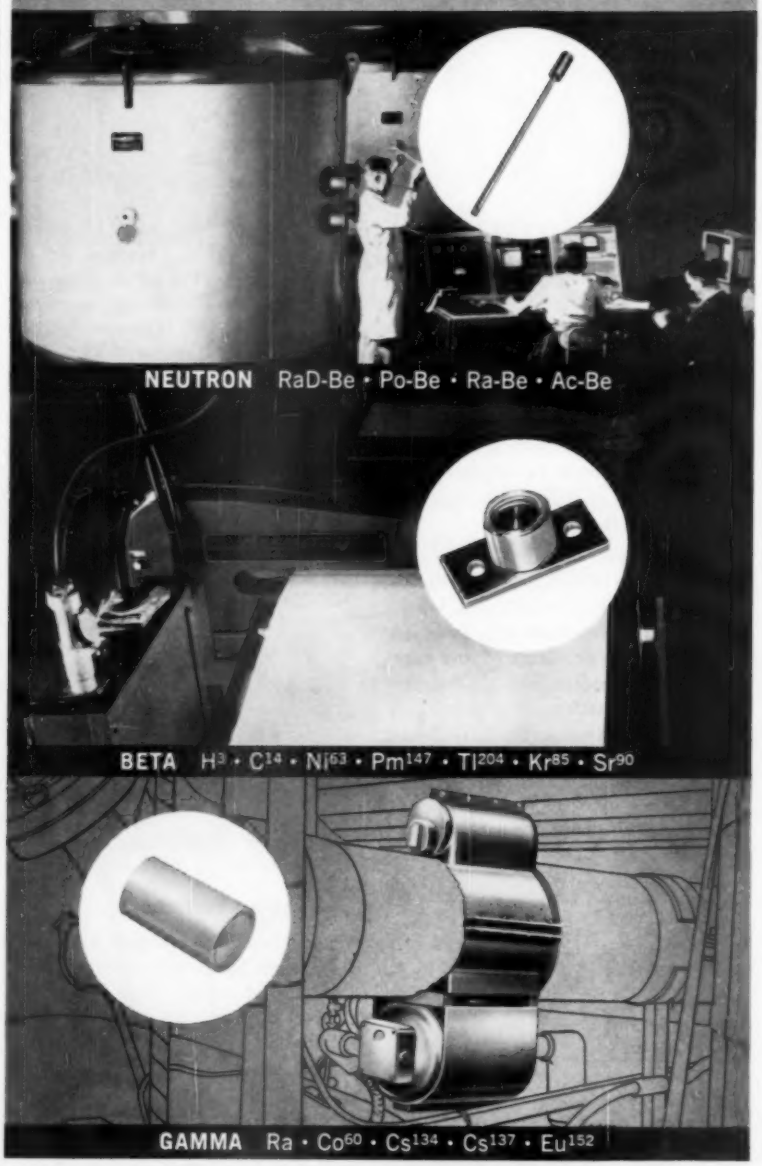

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Log Converter

Model 21006 gives logarithmic analog display on cathode-ray tube or strip-chart recorder. Full range of counts from 1 to 65,535 can be read out in single recording. Converter automatically decodes 16 binary digit numbers with >2% accuracy. Conversion time is 80 μsec per number.—Radiation Counter Laboratories, Skokie, Ill.

Arc-Topping Furnace

Furnace (above) developed for eliminating ingot losses caused by cropping of arc-melted ingots. Top of ingot is remelted by revolving offset electrode guided by hand. Shrinkage cavity can be filled in and top of ingot smoothed off so that no loss of metal is required to prepare ingot for further processing. Operation can be carried out under full vacuum or inert atmosphere.—Vacuum Specialties Co., Inc., 34 Linden St., Somerville 43, Mass.

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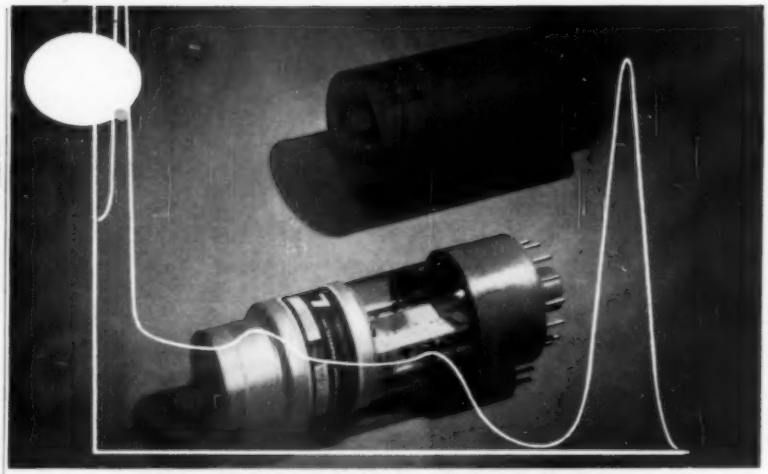

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Department starts on page 212

Ill., 90 miles northwest of Chicago. Center provides laboratory where experiments can be set up and locked storage for apparatus and materials.—Applied Radiation Corp., 2404 N. Main St., Walnut Creek, Calif.

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Output of gas liquefier (above) is about 5 qt/hr. Chief advantage of liquid-air machine is that liquid air can be made economically anytime it is needed. This minimizes evaporation losses normally encountered in storage overnight and on weekends. Production begins about 15 min after machine is started.—Philips Electronics, Inc., 750 S. Fulton Ave., Mount Vernon, N. Y.

Hand and Clothing Monitor

Four large-area scintillation counters, with special dual scintillators, are used to detect both alpha and beta contamination on hands. Final meter readings remain after the hands have been removed and are cancelled when the next person begins testing. Audible and visible danger-level warnings are provided. Background gamma radiation up to 0.5 mr/hr is automatically cancelled during operating period, which can be as short as 5 sec. Two probes attached to the sides of main cabinet provide separate indications of both alpha and beta-gamma levels from clothing and footwear.—E.M.I. Electronics Ltd., Hayes, Middlesex, England.

Survey Meter

Model 6 Juno is portable, battery-operated survey meter that measures intensity of, and distinguishes between, alpha, beta and gamma radiation. Juno is available in two models: SRJ-6 (standard range) for 50, 500, and 5,000 mr/hr full-scale; and HRJ-6 (high range) for 250, 2,500, and 25,000

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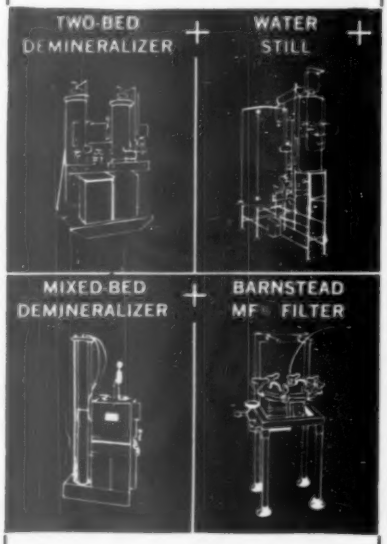

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Scaler

Model SC-18B Superscaler has recessed front panel with controls mounted on strip of brushed aluminum. Instrument can be set for either preset time or preset count, or both simultaneously, with first to expire shutting off scaler. —Tracerlab, Inc., 1601 Trapelo Rd., Waltham 54, Mass.

Automatic Welding Torch

Consumable wire and cold wire fed for high purity atmosphere welding, torch (above) is inside welding chamber (not shown); drive motors and controls are outside. Power and electrical feed-through seals are completely vacuum- and pressure-tight. Feed-wire sizes are 0.020–0.125 in., fed by positive drive through low-friction feeder tube at constant preset rate. Maximum current is 1,200 amp. Standard spool capacity is 16 lb of zirconium wire but can be varied.—Vacuum Specialties Co., Inc., 34 Linden St., Somerville 43, Mass.

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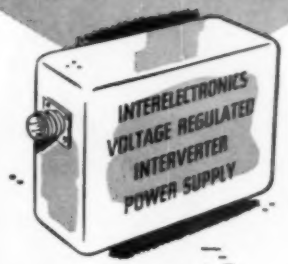

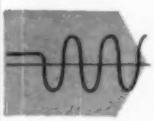

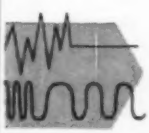

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Model WL-7186 is miniature fission-counter tube for thermal-neutron flux mapping. Small fission chamber 0.5 in. long and 0.25 in. in diameter has integral, rigid coaxial cable 4 ft long. Counter operates in any position and at temperatures up to 125° C. Readings are taken in 5–10 min. Exposed portions of chamber and integral cable are of stainless steel.—Westinghouse Electric Corp., P. O. Box 284, Elmira, N. Y.

Portable Survey Meter

Model GB-1 is portable gamma-beta log-linear survey meter. Specifications are: fast response time 0–1 mr/hr linear with two 3-decade ranges from 0.5–500 mr/hr and 0.5–500 r/hr; mercury-battery powered with 300-hr continuous operation, 1-yr intermittent; energy dependence is flat to within 10% from 80 kv to 1.2 Mev.—Riggs Nucleonics Corp., 717 N. Victory Blvd., Burbank, Calif.

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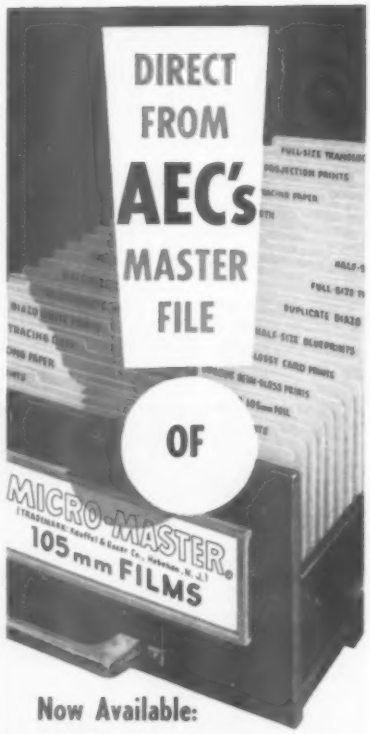

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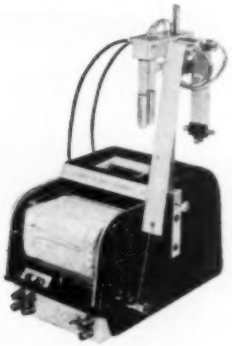

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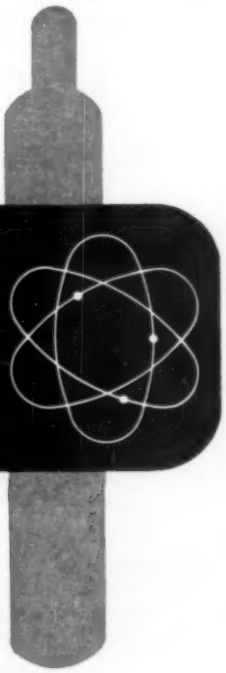

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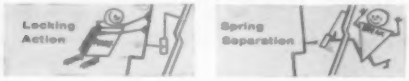

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drives in single mill. Extra heavy bearings permit rolling toughest metals and large range of reductions in both hot and cold rolling. Model 3F rotary Swaging machine has capacity for tubing up to 1¾ in. and solids up to ⅝-in.—The Fenn Manufacturing Co., Newington, Conn.

Mercury Pulse Generator

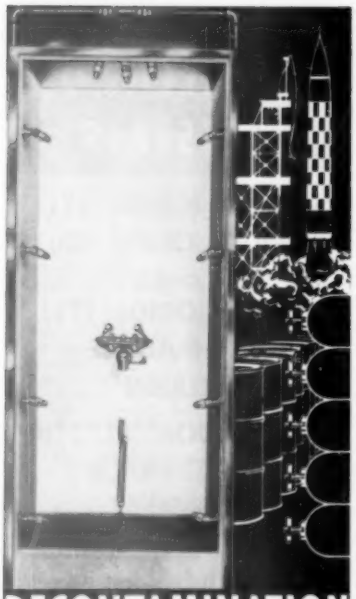
Output pulse height is variable from 100 mv to 100 v. Shape is exponential rise to exponential decay. Rise time is better than 5×10^{-8} and is variable over range of 1,000:1. Decay time constant is 1, 2, 10 or 100 μsec.—Radiation Instrument Development Laboratory, Inc., 5737 S. Halsted St., Chicago 21, Ill.

Underwater Gamma Detector

Model UW-1 (above) is 8¾-lb, portable, underwater, gamma-radiation survey meter. All components are housed in case designed for submersed operations to depths of 300 ft for 24 hr. Scales from 0.01 mr/hr to 1000 r/hr are available in consecutive three-decade ranges. Detector is pressurized ionization chamber with energy dependence flat to within ±10% from 80 kv to 1.2 Mev. Accuracy is ±10% any part on meter scale.—Riggs Nucleonics Corp., 717 N. Victory Blvd., Burbank, Calif.

Carbon Counter

Model CE-14SC has detection unit that provides for analysis of standard 2-in.-dia sample. Average background registered on unit at Richmond, California,



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where it was developed, is 1.5 cpm. High-voltage supply, contained in anti-coincidence scaler, is regulated so that errors in cpm resulting from 5% change in line voltage are <0.03% for observed slope of 3%.—Tracerlab, Inc., 1601 Trapelo Rd., Waltham 54, Mass.

Count-Rate Meter

Model DM4 linear count-rate meter features range selection switch on front panel for choice of full scale ranges of 200, 600, 2,000, 6,000, 20,000 60,000 and 200,000 cpm. Time constants of 3, 10 and 30 sec are provided. Each of seven count ranges can be calibrated by built-in range controls. Front panel controls are also provided for 60-cycle calibration. Voltage regulation is such that there is 0.1% change for 1% change in line voltage.—BJ Electronics Div., Borg-Warner Corp., 3300 Newport Blvd., Santa Ana, Calif.

Portable Shielded Box

Model S-2045 (above) provides minimum of 2-in. of lead-equivalent shielding, includes lead-glass viewing window 4 in. thick. Two ports are normally covered by doors that slide on ball bushings. Doors are balanced so that, although they weigh 150 lb apiece, each can be pushed with finger. Steel sheathing covers the doors. Weight of entire box is about 4,500 lb. Sliding doors with 10- × 12-in. openings are on each side of box.—Allied Nucleonics Corp., 2421 Blanding Ave., Alameda, Calif.

Mercury Vacuum System

Model SEL-3M is capable of ultimate vacuums of the order of 8×10^{-6} mm Hg and has automatic valve closing protection. Unit includes mechanical forepump and 4-in. metal mercury diffusion pump, both ion and thermocouple

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PRODUCTS & MATERIALS

Department starts on page 212

gages for continuous monitoring of both high vacuum and forepump pressures. Valving is controlled by lever operation and can be set to close automatically in case of vacuum spoilage. All valves close in event of power failure. Other features include thermistor cold pump alarm system interlocked with diffusion pump (and external equipment if desired), stainless steel manifold and cold trap construction.—Scientific Engineering Laboratory, 1510 Sixth St., Berkeley 10, Calif.

Radiation Warning Signs

AEC recommendations governing radiation warning signs are met with two aluminum signs. One sign is for areas where the radiation level is 5 mrem/hr but <100 mrem/hr; other sign, is for >100 mrem/hr. Both signs contain radiation caution symbol, color, and words prescribed by AEC regulations. —Picker X-Ray Corp., 25 S. Broadway, White Plains, N. Y.

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Amberlite IRA-402 is strongly basic ion-exchange resin. Highly porous, anion exchanger has high volumetric capacity (up to 30.5 kg as $CaCO_3/ft^3$ of resin) and is recommended for treatment of all water containing high molecular-weight organic compounds. Resin is supplied in chloride form at shipping density of 45 lb/ft^3.—Rohm & Haas Co., Washington Sq., Philadelphia 5, Pa.

High-Purity Vanadium

Vanadium metal with 99.5% minimum vanadium content is available in commercial quantities. Approximate analysis is: 0.025–0.075% Fe, 0.025–0.060% Ca, <0.01% Si, 0.040–0.10% Ni, <0.010% Al, 0.002–0.006% H, <0.005% Cr, 0.050–0.20% O; <0.005% Ca, <0.005% Mn.—Vanadium Corp. of America, Vanadis, Ohio.

Portable Level Detector

Model 890 measuring head, held in hand, contains G-M tube and small gamma source. It operates either from standard supply or from 6-v battery provided.—Isotope Developments, Ltd., Beenham Grange, Aldermaston Wharf, Berkshire, England.

High-Temperature Furnace

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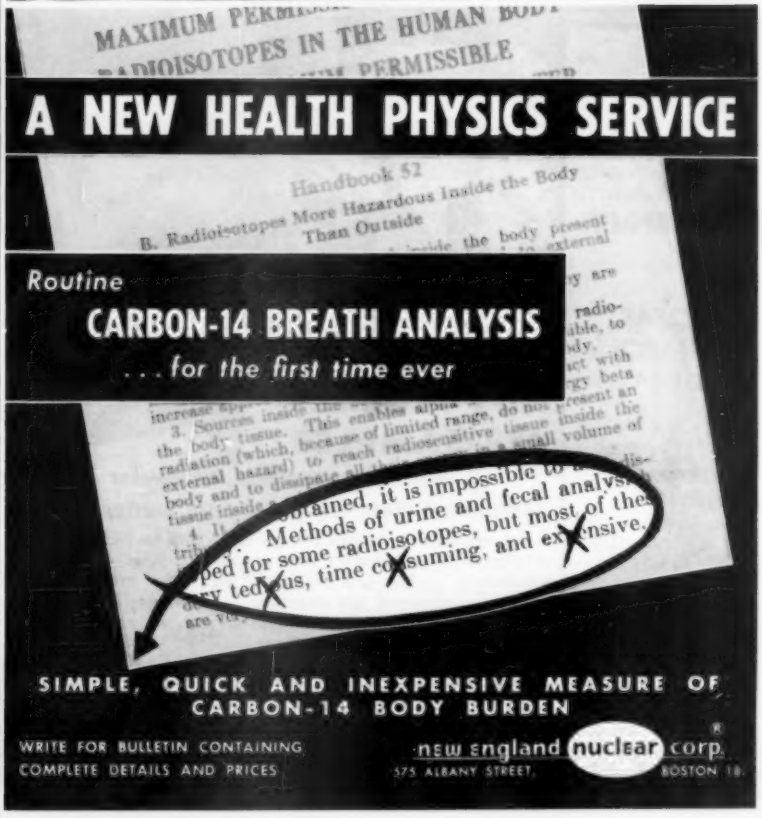
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atmospheres. Unit has skin temperature less than 200° F. Fuel used is oxygen-acetylene. Oxygen or compressed air can also be used with hydrogen, natural gas or propane.—Zirconium Corp. of America, Solon, Ohio.

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Count-Rate Meter

Model N-701B logarithmic count-rate meter is designed specifically for direct counting of pulses resulting from nuclear disintegrations. Maximum-count limit switch can be used to actuate alarm system. Specifications: input is −50–100 v; ranges are 1–1,000 cps, 10–10,000 cps, 100–100,000 cps, 1–100,000 cps; output is 0–10 mv; linearity is 1%; stability is 1% per day after warm up.—Hamner Electronics Co., Inc., P. O. Box 531, Princeton, N. J.

Pulse-Height Analyzer

Transistorized pulse-height analyzer displays count totals in analog or decimal form or automatically prints out. Instrument, housed in desk console, uses ferrite-core storage providing 100 channels, each with maximum capacity of 16 binary digits (equivalent to decimal count of 65,535). Measurement range is 10 v with channel width of 100 mv. The minimum pulse amplitude that can be measured is 0.75 v. Horizontal deflection is made proportional to channel number and vertical deflection to counts in each channel. Dekatron counters provide digital readout in which any given channel can be selected or each channel automatically scanned in turn.—Sunvic Controls, Ltd., Temple Fields, Harlow, Essex, England.

Liquid-Level Controller

Tank-level detector/controller and source of radiation are installed either on opposite sides or across chord of

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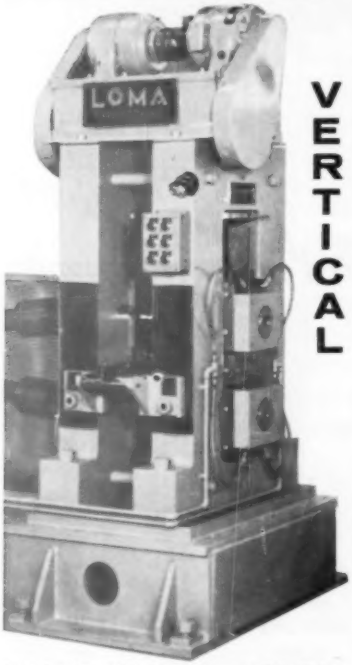

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tank or vessel. Radiation field required at the detectors for operation is 0.2 mr/hr. Detector controller can be used in either of two modes: provide a relay closure signal when the level rises above or falls below level of detector or provide both high-level and low-level signal. Accuracies are available to $\pm\frac{1}{16}$ in.—Industrial Nucleonics Corp., 1205 Chesapeake Ave., Columbus 12, Ohio.

Filtering Pump

Model LEI-10 (above) is compact unit housing filter chamber, filter tube, pump and motor. Pump is inside motor housing and electromagnetically connected to motor. All pump parts are of stainless steel. Motor windings are isolated from pumping chamber by type-316 stainless-steel liner. Conservatively rated at 100–150 gal/hr for LEI-10 and 200–300 gal/hr for LEI-20, pump itself will deliver 1,300 gal/hr on open pumping. Filter chamber contains filter tubes of multilayered processed cotton or special dynel yarn, porous stone or porous carbon providing effective depth of filtration of solutions down to 1 micron.—Sethco Mfg. Co., 2284 Babylon Turnpike, Merrick, N. Y.

Fast Neutron Counter

Model NC-2 shielded "long" counter has BF_3-type detector enclosed in 8-in-dia, paraffin-filled cylinder, which moderates fast neutrons and discriminates against thermal neutrons, that is, in turn, located in 15-in.-o.d. shield, which attenuates fast neutrons from side. Latter shield consists of concentric "cans" of brass, paraffin and cadmium and is ~3 in. thick. Detection ef-

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Aerosol filter holders (above) have o-ring and slip-ring assembly to assure leak-light closure. When used in conjunction with aerosol membrane filters, 0.05-micron particles can be collected. Holders are available in 1-, 2- and 3-in. filter sizes. Construction is of anodized aluminum.—Gelman Instrument Co., 233 Jefferson St., Chelsea, Mich.

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Model SC-50B automatic, windowless flow counter (above) accommodates up to 50 samples. Under gas flow at all times, samples being assayed are stored, counted and restacked in closed system. Instrument can be set so that each sample is counted one, two, three, four or an indefinite number of times in cyclical order. Counter can be sup-

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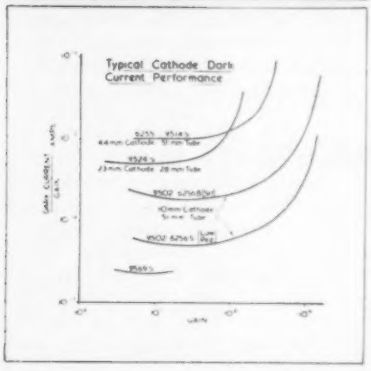

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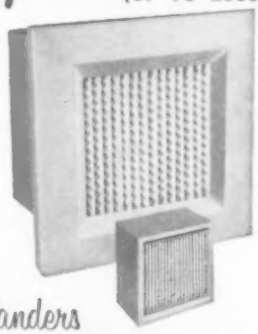

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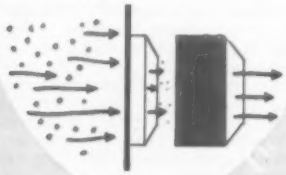

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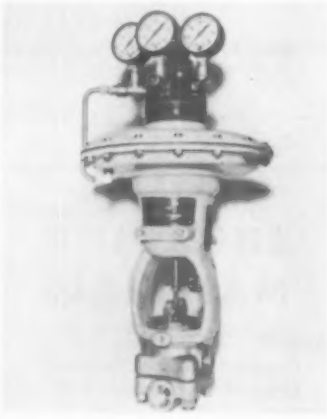

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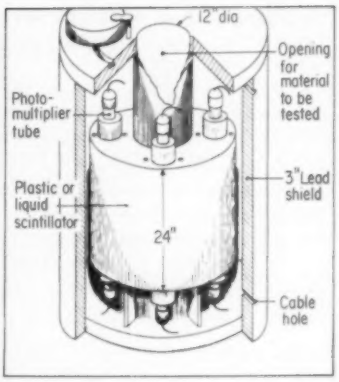

Ratio Computer

Ratio computer (above) is scintillation detector of 4-π geometry with counting time of 100 sec per subject and sensitivity of 5×10^{-10} c for 1.5 Mev gamma rays.—Radiation Counter Laboratories, Inc., 5121 W. Grove St., Skokie, Ill.

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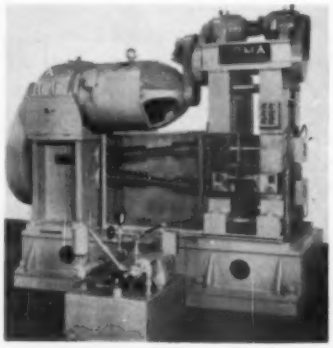

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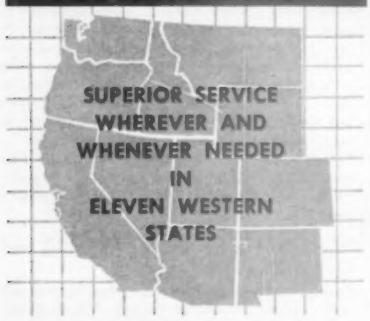

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LITERATURE AVAILABLE

"**Biological Effect** of a Magnetic Field and the Radiation Syndrome" is title of 4-p. reprint.—The Forro Scientific Co., 833 Lincoln St., Evanston, Ill.

Air sampler is described in Brochure 1-H 4.—The Staplex Co., 777 Fifth Ave., Brooklyn 32, N. Y.

Monsanto Magazine, published periodically, discussed such subjects as Project Plowshare and organic-moderated reactors.—Monsanto Chemical Co., Lindbergh & Olive Street Rd., St. Louis 24, Mo.

Nuclear-instrument design and manufacturing personnel and facilities are depicted in 16-p. brochure.—Nuclear Electronics Corp., 2925 N. Broad St., Philadelphia 32, Pa.

Instrumentation handbook explaining uses of nuclear instruments, available in both English and Spanish, is 52-p. training manual.—Radiation Counter Laboratories, Inc., 5121 W. Grove St., Skokie, Ill.

Temperature measurement and control instruments are presented in 4-p. pamphlet.—Radiation Electronics Corp., 8241 N. Kimball Ave., Skokie, Ill.

Thermocouples are subject of 8-p. Bulletin 3.8A.—Aero Research Instrument Co., 315 N. Aberdeen St., Chicago 7, Ill.

"**Flying-Spot Particle Resolver**" is title of 6-p. foldout.—Cinema-Tele-

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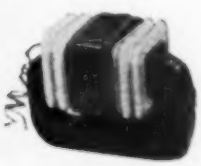

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vision, Ltd., Worsley Bridge Rd., Lower Sydenham, London, S. E. 26, England (U. S. distributor; Marconi Instruments, 111 Cedar Lane, Englewood, N. J.)

Environmental test chambers are depicted in 27-p. brochure.—Webber Engineering Corp., P. O. Box 217, Indianapolis 6, Ind.

Welding equipment, controlled-atmosphere, is described in 3-p. data sheet.—Scientific Engineering Laboratory, 1510 Sixth St., Berkeley 10, Calif.

Laboratory and classroom nuclear equipment are covered in two loose-leaf catalogs.—Nucleonics Corp. of America, 196 DeGraw St., Brooklyn 31, N. Y.

Metal-strip applications are arranged alphabetically in pamphlet as guide to selection.—American Silver Co., 36-07 Prince St., Flushing 54, N. Y.

"Facts About Beryllium" is short title of 24-p. booklet.—The Brush Beryllium Co., 4301 Perkins Ave., Cleveland 3, Ohio.

Infrared-transmitting-material properties are given in 4-p. data sheet.—Servo Corp. of America, 2020 Jericho Tnpk, New Hyde Park, N. Y.

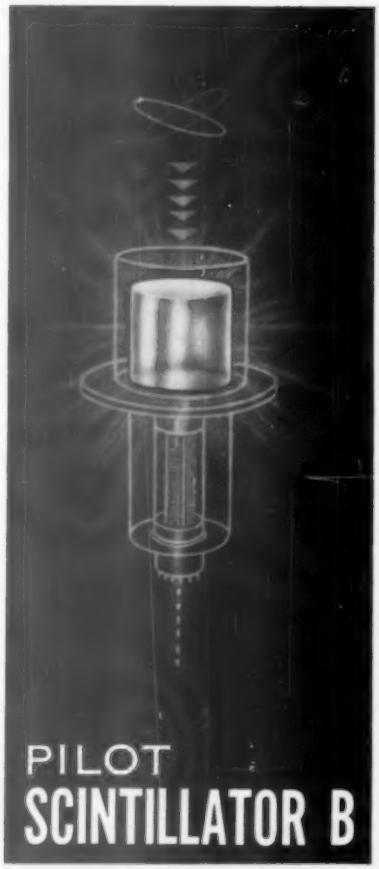
Superior Tube's nuclear products division is described in 4-p. Data Memo 23.—Superior Tube Co., 1552 Germantown Ave., Norristown, Pa.

Liquid-level sensor details are available in Technical Bulletin RF-581.—Robertshaw-Fulton Controls Co., 401 N. Manchester, Anaheim, Calif.

Dosimetry is subject of 14-p. Booklet A-1009a that describes seven types of film, useful exposure ranges, processing and calibration and has bibliography on usage.—Room N-2420-2, Du Pont Co., Wilmington 98, Del.

"Brazed Components" is short title of 6-p. bulletin describing facilities, personnel and production capabilities.—Ferrotherm Co., 1851 E. 65th St., Cleveland 3, Ohio.

Remote valve-control applications are illustrated in 4-p. Bulletin 589.—Stow



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Industrial hygiene aspects of beryllium are discussed in 12-p. booklet.—The Beryllium Corp., P. O. Box 1462, Reading, Pa.

Pulse-height analyzer specifications and operating characteristics are available in 8-p. pamphlet.—Radiation Counter Laboratories, Inc., Skokie, Ill.

Electrometer is featured in latest issue of "The Nucleus."—Nuclear-Chicago Corp., 223 W. Erie St., Chicago 10, Ill.

Hydro-forging process for producing large-diameter stainless-steel pipe is described in 8-p. data sheet.—United States Pipe & Foundry Co., Burlington, N. J.

Radiation-detection instruments are featured in latest issue of "The NMC Fallout."—Nuclear Measurements Corp., 2460 N. Arlington Ave., Indianapolis 18, Ind.

Pulse generator (2-Mc) is covered in 3-p. data sheet.—Electro-Pulse, Inc., 11861 Teale St., Culver City, Calif.

Spectrophotometer is described in 8-p. Bulletin B-241.—Coleman Instruments, Inc., 318 W. Madison St., Maywood, Ill.

Tritium-labeled thymidine and cytidine are given price list.—Schwarz Laboratories, Inc., 230 Washington St., Mount Vernon, N. Y.

Ion exchange is discussed in 4-p. paper.—Chemical Separations Corp., P. O. Box 149, Oak Ridge, Tenn.

Instrument systems are described in 36-p. Catalog A-2.—Baird-Atomic, Inc., 33 University Rd., Cambridge 38, Mass.

Flowmeter selection is subject of 6-p. reprint Bulletin 91-119.—Fischer & Porter Co., 547 Jacksonville Rd., Hatboro, Pa.

Infrared spectrophotometer is described in 2-p. Technical Data Sheet IR-450.—Baird-Atomic, Inc., 33 University Rd., Cambridge 38, Mass.

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are tabulated in data sheet.—American Silver Co., 36-07 Prince St., Flushing 54, N. Y.

Beta-ray spectrometer is subject of booklet.—Tracerlab, Inc., 1601 Trapelo Rd., Waltham 54, Mass.

Thermal-neutron detector is discussed in 2-p. Bulletin 13.—Nuclear Enterprises, Ltd., 1750 Pembina Hwy., Winnipeg 9, Canada.

Stainless-steel castings for valves and fittings are subject of 4-p. brochure.—Cooper Alloy Corp., Hillside, N. J.

Radiation-measurement instruments are described in 8-p. Catalog G-12B.—William B. Johnson & Associates, Inc., 126 Liberty St., New York 6, N. Y.

Activated-alumina information is given in 2-p. data sheet.—Bio-Rad Laboratories, 32nd and Griffin Ave, Richmond, Calif.

Dissolved-oxygen analyzer is discussed in 4-p. Bulletin O-4014.—Beckman Instruments, Inc., 2500 Fullerton Rd., Fullerton, Calif.

Canned-motor pumps are described in 4-p. Bulletins 1050-3 and 1070.—Chempump Corp., 1300 E. Mermaid Ln., Philadelphia 18, Pa.

Decade scaler is described in Bulletin DS-1A.—Nuclear Measurements Corp., 2460 N. Arlington Ave., Indianapolis 18, Ind.

Waste-disposal processes is subject of 11-p. brochure.—Section 3-P, Nuclear Science and Engineering Corp., P. O. Box 10901, Pittsburgh 36, Pa.

"The Laboratory" is title of publication issued periodically.—Fisher Scientific Co., 711 Forbes Ave., Pittsburgh 19, Pa.

Nuclear instruments, medical and industrial, are described in 43-p. Catalog A.—American-Nuclear Div., American Electronics, Inc., 9459 W. Jefferson Blvd., Culver City, Calif.

"Capacitor Facts" is title of 8-p. Bulletin GET-2698 covering application of large capacitors for use in thermo-

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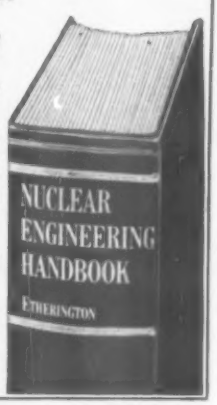

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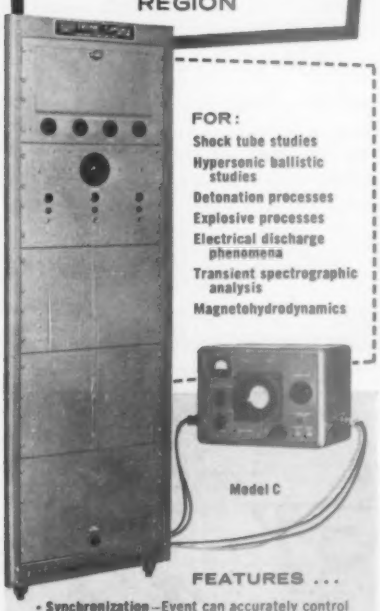

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PRODUCTS & MATERIALS

Department starts on page 212

nuclear energy-storage banks.—General Electric Co., John St., Hudson Falls, N. Y.

General-purpose counter is described in 4-p. Leaflet 185.—Airmec, Ltd., High Wycombe, Buckinghamshire, England.

Stainless-steel corrosion-resistance data is contained on chart.—Peter A. Frasse & Co., Inc., 17 Grand St., New York 13, N. Y.

Glow-tube scaler is described in 2-p. data sheet.—Baird-Atomic, Inc., 33 University Rd., Cambridge 38, Mass.

Applied research in space technology, plasma dynamics and hypersonics is described in 16-p. booklet.—General Electric Co., 3750 "D" St., Philadelphia, Pa.

Alpha counters are depicted in flyer.—Gerard G. Leeds Co., Inc., 12 Crampton Ln., Great Neck, N. Y.

Reactor-control components and systems are described in 4-p. Bulletin GR-57-6.—General Regulator Corp., 666 Fifth Ave., New York 19, N. Y.

Centrifugal chromatograph, high-speed, is featured in 12-p. Apparatus Review 8.—Arthur S. LaPine & Co., 6001 S. Knox Ave., Chicago 29, Ill.

Chromatogram scanner is described in 4-p. brochure.—Volk Radiochemical Co., 5412 N. Clark St., Chicago 40, Ill.

Proportional counters are described in 4-p. Bulletin PC-58.—Nuclear Measurements Corp., 2460 N. Arlington Ave., Indianapolis 18, Ind.

Linear accelerators is subject of 14-p. booklet.—American Radio Co., Inc., 445 Park Ave., New York 22, N. Y.

"ZETA the Zero Energy Thermonuclear Assembly" is title of 13-p. reprint.—Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate, Surrey, England.

Cast stainless steels—how to cut, weld and heat treat them—are discussed in 4-p. reprint.—Alloy Casting Institute, 286 Old Country Rd., Mineola, N. Y.

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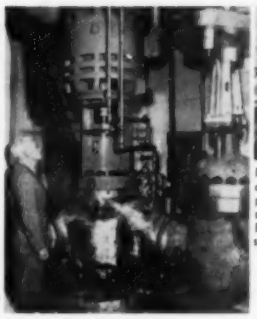

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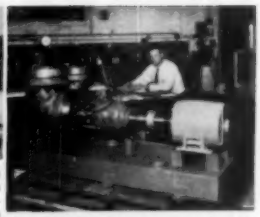

This limited leakage pump for an Atomic Laboratory is shown above undergoing final high temperature seal tests. Parts in contact with pumpage are all of 304 stainless steel.

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INDUSTRY NOTES

• **Allstate Engineering,** Trenton, N. J., has entered the nuclear aircraft program as subcontractor to General Electric for remote handling equipment for reactor and shielding.

• The **National Bureau of Standards** has discontinued distribution of 12 radioisotope samples; standardized samples are available commercially from **Nuclear-Chicago.**

• **Oak Ridge National Laboratory** is offering uranium enriched to more than 99.97% in the U^{235} isotope. Prices, plus transportation, are $15.25/gm uranium oxide ($U_3O_8$), $16.50/gm for ⅛-in.-dia cast rods and $16.75/gm for metal foil.

• **Trans Dynamics, Inc.,** Burbank, Calif., has been appointed Western sales and application engineer for the nuclear controls manufactured by **Teleflex, Inc.** Teleflex recently created a nuclear division to handle rising sales volume.

• **Lithium Corp. of America** has declared a 4% stock dividend payable Dec. 1 to stockholders of record Nov. 3—its 1958 declaration.

EXPANSIONS. Construction of an 18,000-sq-ft building for expanded reactor production and assembly facilities has been started at San Ramon, Calif., by **Aerojet-General Nucleonics** . . . **Allis-Chalmers,** expanding its work in high-energy radiation, has formed an accelerator section in the motor-generator dept. under the direction of A. N. Haig, engineer-in-charge . . . **Crane Co.** has organized a subsidiary—**Corwith Corp.,** Chicago—to handle government-sponsored research and development, including reactor materials work for AEC . . . **Minneapolis-Honeywell** has acquired **Marion Electrical Instrument Co.,** Manchester, N. H., producer of precision electrical measuring and panel meters . . . **Electric Storage Battery** has opened a research center, including a complete radioisotope tracer lab, at Yardley, Pa. . . . **Patterson Foundry and Machine,** East Liverpool, Ohio, is expanding its chemical processing work to take on the engineering, design, fabrication and installation of integrated nuclear systems and components.

NEW BUSINESS. Iowa State College has ordered an argonaut-type research reactor from **American-Standard Atomic Energy** division for completion in the fall of 1959 . . . **Diversified Builders,** Paramount, Calif., was winning bidder—at $3,620,000—for a contract covering the second major building phase of the Experimental Breeder Reactor No. 2 at the National Reactor Testing Station; work includes construction of a power plant and cooling tower and completion of reactor building . . . **Titanium Fabricators,** Burbank, Calif., has been given a development contract by Union Carbide Nuclear on techniques for forming and welding pressure vessels from zircaloy-2 plate . . . Recent sales of **High Voltage Engineering:** a 20-Mev linear accelerator to Japan's Atomic Energy Research Institute; a 10-Mev tandem Van de Graaf accelerator to California Institute of Technology; a 1-Mev Van de Graaf particle accelerator for food irradiation studies to the European Technical Research Center, Karlsruhe, Germany; and a 10-Mev tandem to Australian National Univ.; also lease of a 3-Mev electron accelerator to Ethicon, the latter's third . . . **Consolidated Controls Corp.** has won an $800,000 order from Westinghouse covering instrumentation for submarine reactors . . . Atomics International has ordered six tons of U oxide fuel from **Nuclear Materials and Equipment Corp.** for use in exponential experiments of the Hallam, Neb., sodium reactor program; NUMEC says it has a five-ton order from the French government and orders for reactor control materials and fuel elements from Westinghouse, M&C Nuclear, and Knolls Atomic Power Laboratory.

NEW FIRMS. In New Canaan, Conn., **David M. Schoenfeld,** consulting engineer in nuclear and other applications . . . **Bickley Furnaces,** 12 South St., Philadelphia, design and manufacture of high-temperature furnaces for nuclear and other fields.

COMPANY MOVES. New address of the eastern sales division, **Cook Electric Co.,** is 600 Old Country Rd., Garden City, Long Island . . . New southern California office of **Pacific Coast Engineering** is at 1404 Cravens Ave., Torrence . . . **Applied Physics Corp.** has completed its move to new quarters at 2724 South Peck Rd, Monrovia, Calif.

NUCLEAR CAMPUS

• **Michigan Memorial-Phoenix Project** at the Univ. of Michigan will make $100,000 available this school year to faculty members for research in "the social, philosophical, legal or economic aspects of nuclear energy and its impact on our civilization." More specifically, the awards will support research in nuclear theory, use of radioisotopes in the sciences and radiation-induced changes in physical and biological systems.

• **Virginia Polytechnic Institute,** already granted $114,098 by AEC toward the cost of its $180,000 research reactor, has been given an additional $7,500 by Westinghouse Educational Foundation. The argonaut-type reactor will give VPI one of the most extensive nuclear facilities collection on a U. S. campus—including a reactor simulator, two accelerators, a digital computer and radiochemistry and metallurgy labs.

• Erwin R. Gaerttner and Max L. Yeater of Knolls Atomic Power Laboratory have joined the physics faculty of **Rensselaer Polytechnic Institute** as visiting professors to direct RPI's linear accelerator program; Gaerttner will head the program, with Yeater second in command. The accelerator facility, funded jointly by RPI and AEC, is on a schedule calling for a construction start this school year and operation during 1960.

• **Rice Institute** and the **Univ. of Maine** have ordered research reactors from Aerojet-General Nucleonics and have applied to AEC for permission to operate the units. Rice's is an AGN-211, rated at 15 watts; Maine's is an AGN-201, rated at 100 milliwatts.

• On the other hand, the **Univ. of Oklahoma** has abandoned plans to acquire an Atomics International Model L-47 reactor.

• **Six institutions have purchased** the subcritical training reactor marketed by Nuclear-Chicago. Latest to take delivery was the Univ. of Connecticut; others are being delivered to Texas Technological College, California Institute of Technology, Iowa State Univ., Occidental College of Los Angeles and Utah State Univ.

• Another series of contract awards in

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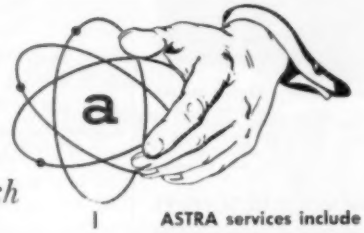

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physical research and the life sciences has been made by AEC. More than $3-million went to colleges, universities and private research institutions under 61 existing contracts and 11 new contracts for physical research; another $1.5-million-plus went to several score institutions—28 of the 102 contracts are new projects, the rest renewals.

• A shortage of nuclear engineers in France has led to intensive after-hours courses in industrial applications of nuclear energy for working engineers trained in other disciplines. The course is sponsored by the Centre de Preparation Pratique aux Applications Industrielles de L'Energie Nucleaire, Paris.

Courses

The U. S. Public Health Service's Robert A. Taft Sanitary Engineering Center, Cincinnati, is offering radioactive pollutants in water Nov. 17–21 and sanitary engineering aspects of nuclear energy Dec. 1–12. For applications contact Chief, Training Program, 4676 Columbia Parkway, Cincinnati 26, or any USPHS regional office.

The City of New York and AEC will sponsor a four-months' course in the medical uses of radioisotopes at Queens Hospital Center, beginning Feb. 10. Twenty-six "faculty" members, only five from the Center itself, will conduct weekly five-hour sessions covering lectures, lab exercises and clinical management of patients. Apply to Philip J. Kahan, supervising medical superintendent, Queens Hospital Center, 86–68 164th St., Jamaica 32, N. Y.

At the graduate level, the Univ. of Michigan is offering thermonuclear theory through its new department of nuclear engineering.

AEC is offering three advanced-study courses in nuclear technology for students of "friendly foreign nations." Two reactor courses, reactor hazards evaluation and reactor supervision, will begin at Oak Ridge National Laboratory on Feb. 2—the former for 12 months, the latter for nine. Radiochemical and counting procedures—a six-week course—is being offered by AEC's New York Health and Safety Laboratory; the first class began Oct. 6, a second will begin Jan. 12. The course is given four times a year. Applications should be sent through applicant's Washington embassy or legation.

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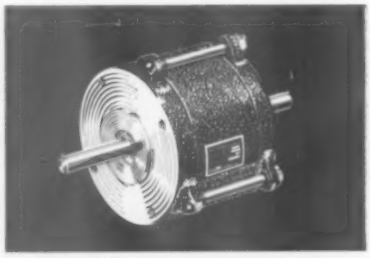

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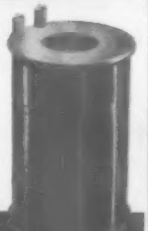

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NEWSMAKERS

O. C. Schroeder, a participant since 1944 in the startup of six nuclear plants at Hanford, Wash., has been named manager of construction engineering for General Electric, operator of Hanford Works. He succeeds **R. J. Schier,** who has moved to the post of manager, plant employee relations.

Victoreen Instrument has appointed **George R. Lippert** to direct the company's expansion in large nuclear monitoring systems, telemetering and computing, and worldwide measurement of radioactive fallout. Lippert is former vice president and chief engineer, I-L-S Instrument Corp., also of Cleveland. He will handle Victoreen liaison with AEC, the new National Aeronautics and Space Administration, and other customers of the firm.

Lippert

Warren G. Palmer has joined the central engineering electronics laboratory of Food Machinery and Chemical Corp. for development work in radiation applications.

Louis A. Turner, director of the physics division at Argonne, has been appointed deputy to Lab Director Norman Hilberry. The job has been unfilled since Hilberry was promoted to director last year. Turner was the first to suggest the possibility of producing and using plutonium as a nuclear fuel, foreshadowing the breeding principle.

New manager of advanced development at Knolls Atomic Power Laboratory is **Richard Ehrlich** former manager of mathematical analysis. He succeeds **W. R. Kanne,** who has transferred to the atomic power equipment dept. of General Electric, operator of KAPL for AEC. Ehrlich's chief responsibility will be directing physics and mathematics research and evaluating new reactor concepts.

Ehrlich

Continued on page 254

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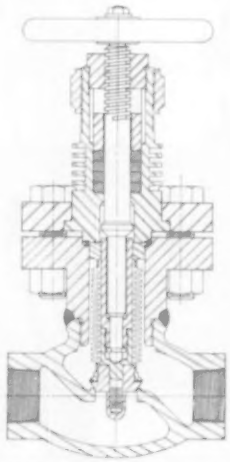

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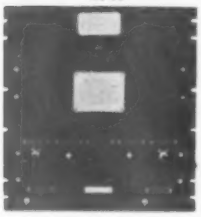

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NEWSMAKERS

Department starts on page 252

Richard M. Whitehorn, senior engineer at Varian Associates, has been picked to head the firm's newly created radiation research dept. The department was created to support Varian's new radiation division. In his two years with Varian, Whitehorn has had design, development and evaluation responsibilities in communications, radar, navigation and missiles, plus advisory responsibilities on Varian operations.

Whitehorn

Allis-Chalmers has added physicist **John M. Michels** to its nuclear power division. Another new appointment is **Frederick H. Linley, Jr.,** northeast regional representative for power plant equipment of the Allis-Chalmers Industries Group.

Lithium Corp. of America, reorganizing itself, has named **Harry D. Feltenstein, Jr.,** to a new post—executive vice-president and general manager. The firm now has seven operating departments: manufacturing-mining, sales, research-development, market research, manufacturing planning-engineering, financial controls and purchasing-traffic.

Ethan A. Smith, Jr., has been appointed manager for development engineering, a new position at Beryllium Corp. Before joining Beryllium in 1953, Smith was an assistant project engineer at Curtiss Wright and an associate research engineer at Boeing Airplane Co. His new post was created to support the firm's expansion of its product line.

Smith

Marvin E. Waspe, assistant plant manager, has been promoted to plant manager, Cincinnati division, Bendix Aviation Corp. Waspe will also have temporary charge of the engineering dept.

Radiation Counter Laboratories has added four men to its engineering staff: **Donald H. Plasterer,** assistant chief of

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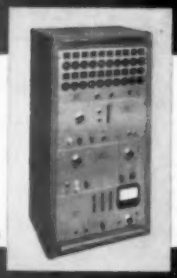

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the new industrial applications division; **Henry Barton,** senior engineer; **Dominick Crupi,** quality control engineer; and **Casimir Dudek,** production engineer.

Earle W. Mills has been elected chairman of Foster Wheeler Corp. **W. L. Martwick** has succeeded Mills as president and **John E. Kenney** has been named executive vice president, rounding out a reorganization at the top.

Nine new employees have joined the atomic energy division of Phillips Petroleum; in addition, **Henry L. McMurry** has returned as supervisor, theoretical physics section, after a year's leave of absence at Oxford Univ. New employees are: **Harold T. Hahn,** chemist; **Louis A. Schmittroth,** mathematician; **Robert R. Spencer,** physicist; **David Booty, John Faller** and **Wayne Erickson,** reactor engineers; **Owen V. Coble,** chemist; **Roger Johnson,** physicist; and **Dennis Skinner,** safety engineer.

Four new appointments at Ebasco Services: **Frederick C. Tonetti,** assistant director of research; **H. K. Fairbanks,** consulting civil engineer; **H. W. Stuber,** chief concrete-hydraulic design engineer; and **A. T. Larned,** associate consulting engineer.

Two top posts at Wilbur B. Driver Co., Newark, have been filled by **Raymond O. Hallberg,** new vice president in charge of operations, and **Peter Stefan,** new manager for mechanical alloys.

Robert C. Straka, Jr., has been named manager of special products engineering, refractories division, The Carborundum Co. In this new post, he will be responsible for the coordination and development of special product use in nuclear power applications and military projects.

William Brown, president of General Hermetic Sealing Corp., has been elected a director of Radiation Dynamics, Inc.

Raymond L. Murray of the North Carolina State physics dept., has been honored with award of a distinguished professorship by the college. Murray is a member of the board of the American Nuclear Society and a consultant on reactor design to Oak Ridge National Laboratory.

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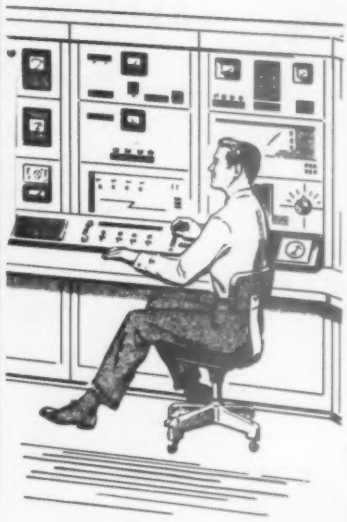

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Nov. 16–21—44th annual meeting, Radiological Society of North America, Chicago (*Palmer House*).

Nov. 18–20—Ninth national conference on standards, sponsored by American Standards Assn., New York City (*Roosevelt*). Session on nuclear codes Nov. 19. Contact K. G. Elsworth, ASA, 70 E. 45th St., New York 17.

Nov. 18–20—National conference on air pollution, sponsored by the U. S. Public Health Service in Washington, D. C. (*Sheraton Park*). Contact USPHS, Dept. of Health, Education and Welfare, Washington.

Nov. 21–22—Third symposium on magnetohydrodynamics at Lockheed Missile Systems research laboratory, Palo Alto, Calif. Contact Dan Bershader.

Nov. 28–29—American Physical Society, Chicago (*Univ. of Chicago and Windermere Hotel*). Contact K. K. Darrow, Columbia Univ., New York 27.

Dec. 1–5—23rd National Exposition of Power and Mechanical Engineering, New York (*Coliseum*). Sponsored by American Society of Mechanical Engineers. Concurrent technical sessions of Nuclear Engineering div., ASME. Contact International Exposition Co., 480 Lexington Ave., New York 17.

Dec. 4–5—International symposium of the Univ. of California Radiation Laboratory on pulsed-neutron-source techniques, Berkeley. Contact J. E. Carothers, UCRL, Box 808, Livermore, Calif.

Dec. 8–10—Winter meeting, American Nuclear Society, Detroit. Contact Octave DuTemple, 86 E. Randolph St., Chicago.

Jan. 22–23—Symposium on nuclear fuel cycles, sponsored by the Institute of Physics in London. Contact the Institute secretary, 47 Belgrave Square, London S. W. 1.

Jan. 28–29—First International Symposium on Nuclear Fuel Elements, Columbia Univ., New York. Sponsored jointly by Columbia and Sylvania-Corning Nuclear Corp. Contact H. H. Hausner, 730 Fifth Ave., New York 19.

Mar. 31–Apr. 1–2—21st American Power Conference, Chicago (*Sherman*). Contact R. A. Budenholzer, Mechanical Engineering Dept., Illinois Institute of Technology, 3300 Federal St., Chicago 16.

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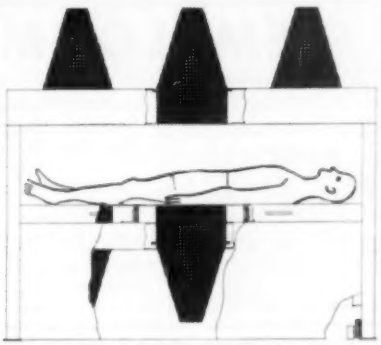

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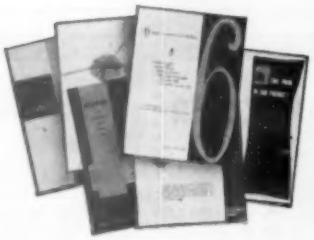

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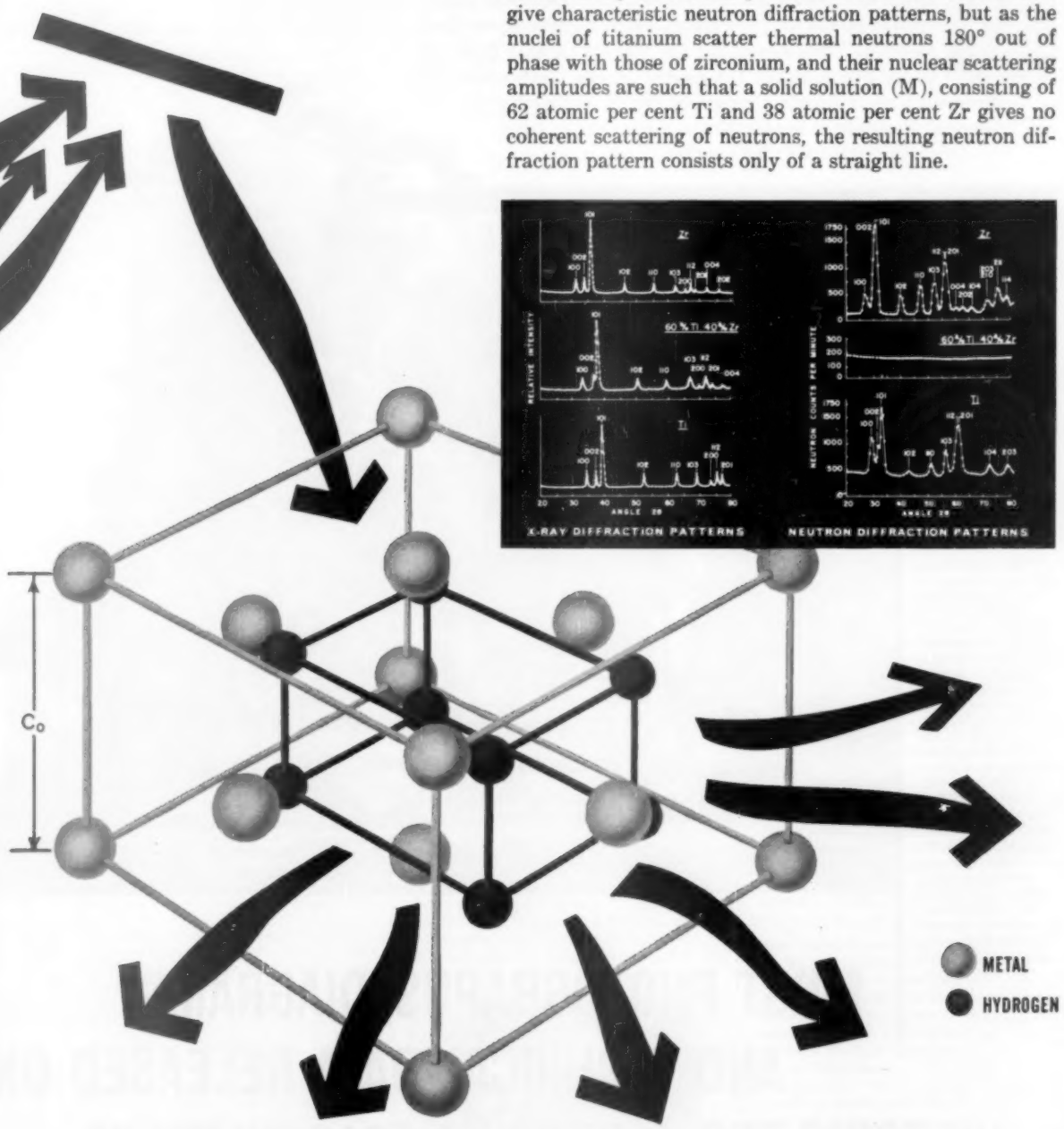

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ENGINEERS, SCIENTISTS: Specific Experimental Data have now been declassified from which you can gauge the breadth of the opportunities for original work open to you in the pioneering field of nuclear power for aircraft. This information is made available from a paper prepared for the recent Geneva Conference on Peaceful Uses of Atomic Energy, by Mr. D. R. Shoults, General Manager, Aircraft Nuclear Propulsion Dept. of General Electric, Cincinnati, Ohio.

Test Assembly for HTRE No. 1 to the right is on its way to test area on a flat car, drawn by a shielded locomotive. Test area control center itself is underground for safety considerations. During test period, the *Direct Cycle Nuclear Turbojet System* was shut down between operating phases and the Test Assembly returned to the "*Hot Shop*" (a chamber with 7 ft. thick concrete walls and 6 ft. thick windows) where remote handling equipment, designed for this program, disassembled components for the inspection or replacement of parts.

FIRST PHOTOGRAPHS, DIAGRAMS AND TECHNICAL DATA RELEASED ON HISTORIC TESTS PROVING FEASIBILITY OF DIRECT CYCLE NUCLEAR TURBOJET SYSTEM FOR AIRCRAFT

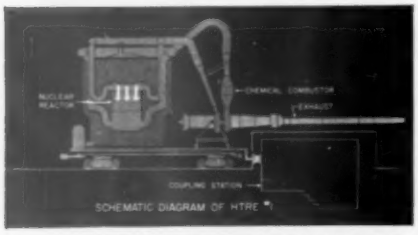
Successful Heat Transfer Reactor Experiment No. 1 Basis of Present Advanced Development Stage of Aircraft Nuclear Power Plant

HTRE No. 1 marked *the first time* that all the components of a combined reactor and jet engine power plant were assembled and operated.

The system was developed and produced by General Electric engineers and scientists at the Aircraft Nuclear Propulsion Department, Cincinnati, Ohio, under dual contract with the U.S. Air Force and the U.S. Atomic Energy Commission. The tests were conducted at the National Reactor Test Station in Idaho Falls, Idaho, during the period January 1956-January 1957.

"These tests," Mr. Shoults writes, "were of great significance in meeting the objective of developing a useful aircraft nuclear propulsion system. HTRE No. 1 proved conclusively the operability of the system and the predictability of its performance."

The Test Assembly for the experiment consisted of an air-cooled, metallic-fuel-element, water-moderated reactor operating a modified J47 turbojet engine designated X39. *A photograph of this assembly is reproduced at the left; schematic diagram below shows a simplified version of the air flow path through the system.*

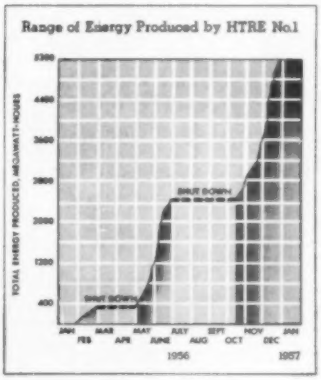


Test Assembly utilizes the direct air cycle to which propulsive thrust is provided by sending atmospheric air from the compressor (compressed to 5 times the intake pressure) directly through reactor, into the turbine, and out exhaust nozzle.

The reactor core structure consists of a cylindrical water vessel penetrated by air tubes. The shield plug structure and the heavy gamma ray shielding are of stainless steel. Moderator water is used for neutron shielding in shield plug.

The power plant is started on chemical fuel alone, with compressor air passing through the cold reactor. As the reactor power increases, the chemical fuel flow is decreased. When nuclear power is sufficient for self-sustaining operation, chemical fuel is cut off.

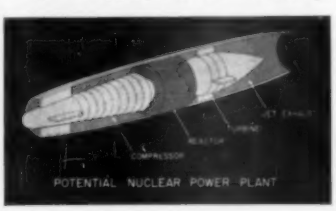
Throughout the tests, operation was stable during the transition from chemical to nuclear power and the reactor was responsive to both manual and automatic control. Combined operating time during test period totalled 258 hours. *A chart showing total energy produced in test period is reproduced below.*



Confirmation of Design Concept of Direct Cycle Nuclear Turbojet System Obtained

Extensive operation at full nuclear power was recorded without failure or significant leakage of radioactive material to the airstream. Proof was obtained that overheating portions of the reactor would not lead to local flow starvation and progressive overheating.

Much of the apparatus illustrated was provided for developmental convenience and would not be used in an actual system for aircraft. The shield, for example, is extra-heavy to allow external contact maintenance during shut-down. In an aircraft installation the shield would be much lighter and the engine would be coupled more closely to the reactor-shield assembly. *A diagram of a potential configuration for a Direct Cycle Nuclear Turbojet System for airframe application is shown below.*



2nd and 3rd Generation Nuclear Power Plants for Aircraft Now Under Development

Research and development has proceeded at an accelerated pace at General Electric, since the epochal results of HTRE No. 1 in early '57.

The great challenge of the aircraft nuclear propulsion project is that this type of system requires generation of large amounts of heat from a nuclear reactor of very small volume. Also, all items comprising the power plant must be provided within very stringent weight limitations.

Intensive work has been — and is — under way in areas of reactor design, shield design, and the development of new materials to withstand extreme temperatures and neutron bombardment, as well as new methods of fabricating these materials.

While much progress has been made, many problems must still be solved before the first high performance aircraft flies on nuclear power.

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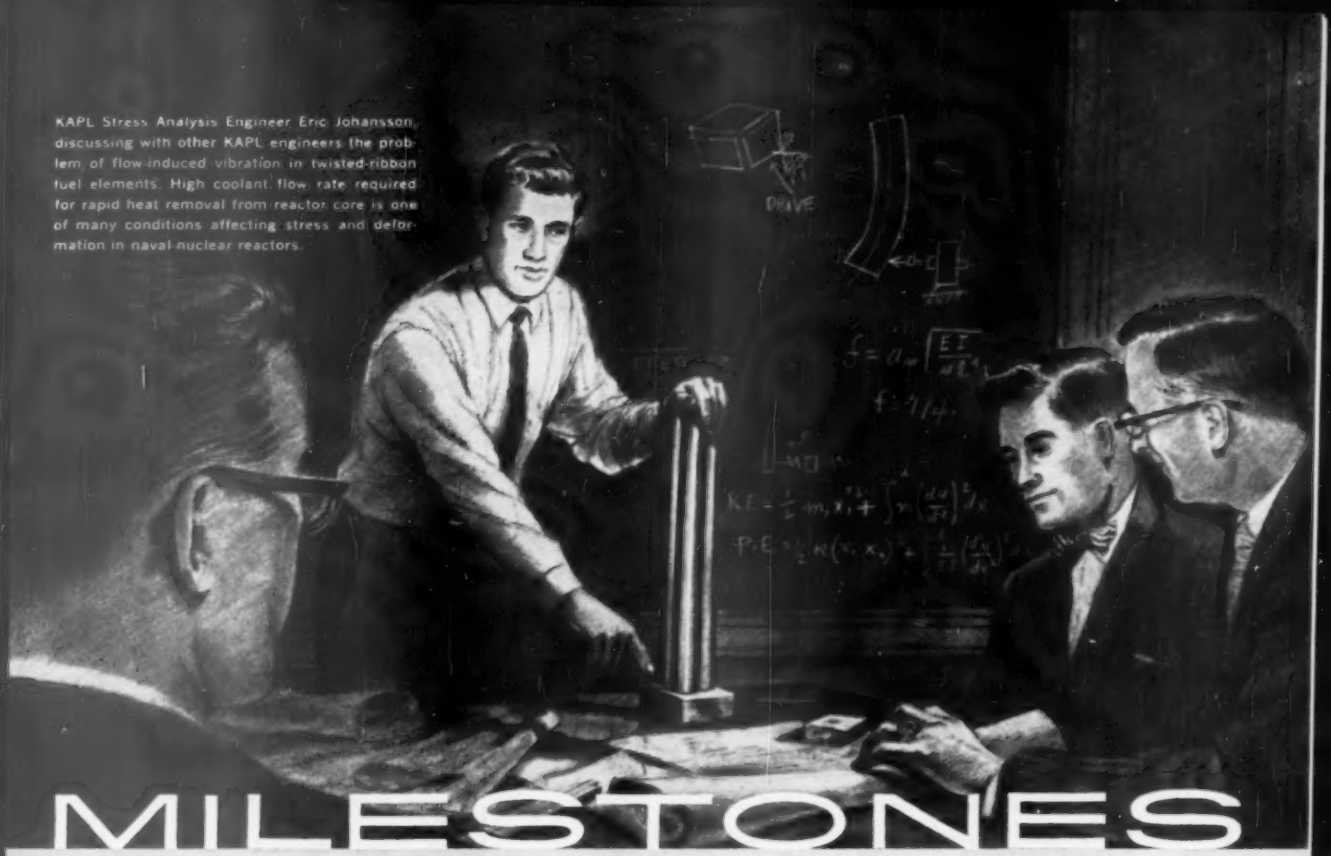

KAPL Stress Analysis Engineer Eric Johansson, discussing with other KAPL engineers the problem of flow-induced vibration in twisted-ribbon fuel elements. High coolant flow rate required for rapid heat removal from reactor core is one of many conditions affecting stress and deformation in naval nuclear reactors.

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Eric B. Johansson is one of approximately twenty Stress Analysis Engineers working on naval reactors at KAPL. Eric joined G.E. in 1951 following graduation from the California Institute of Technology and graduate study at UCLA. He has completed advanced study in engineering analysis as a graduate of G.E.'s Advanced Engineering Program and has taken additional graduate work at Rensselaer Institute of Technology under G.E.'s Tuition Refund Program.

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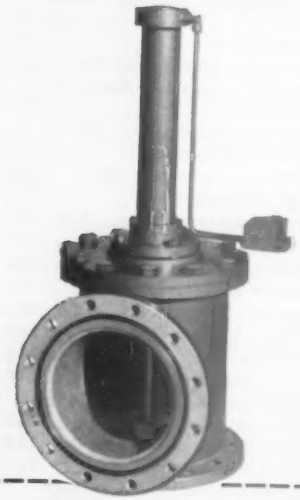

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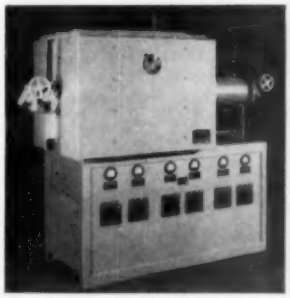

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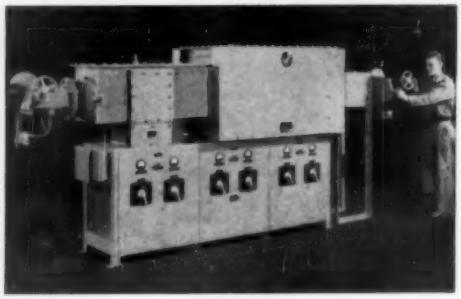

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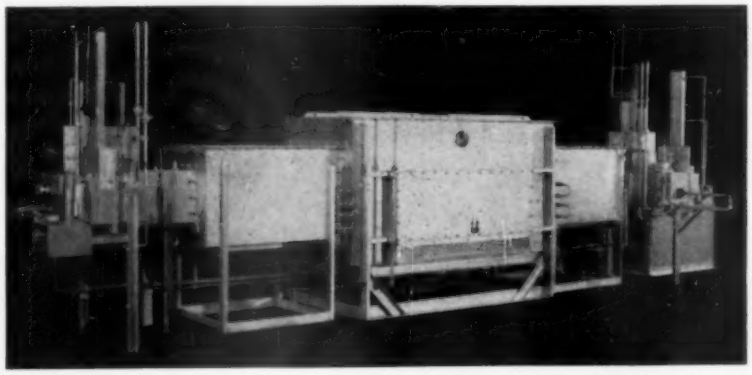

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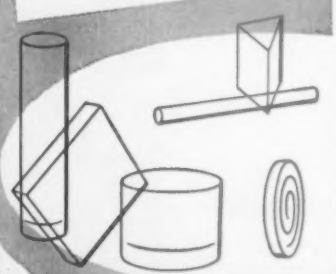

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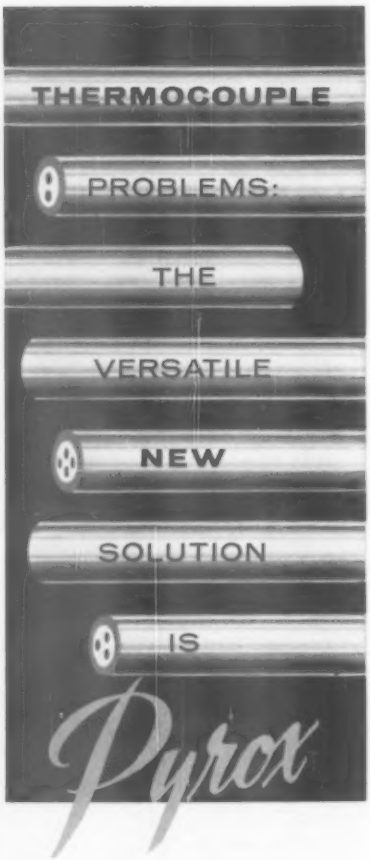

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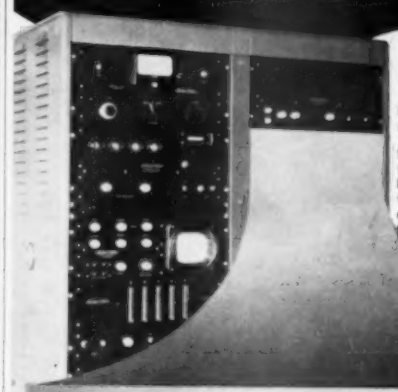

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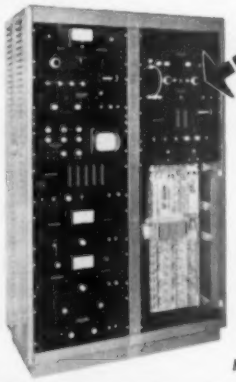

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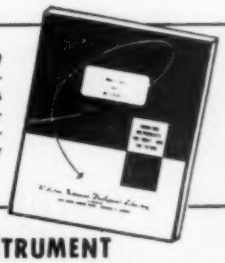

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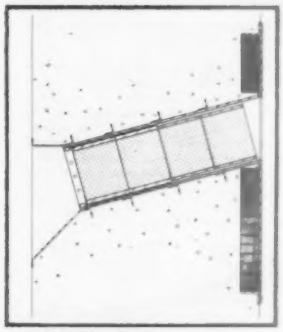

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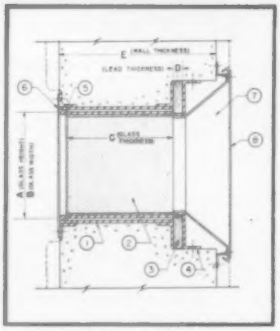

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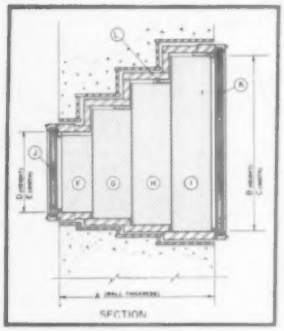

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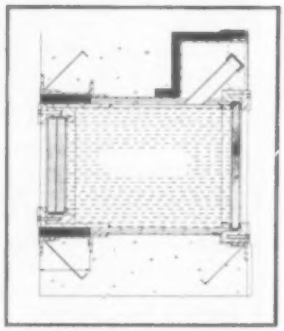

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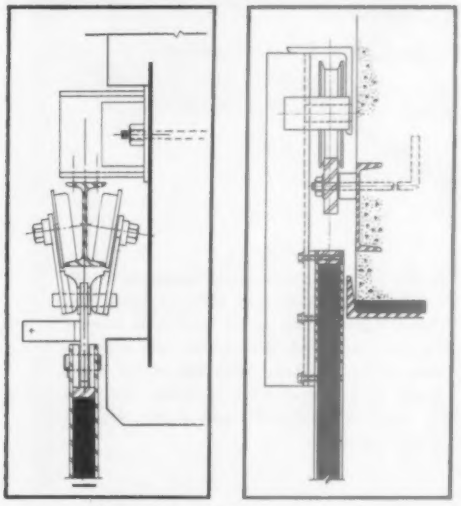

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Rohm & Haas Co., Washington Square, Philadelphia 5, Pa.
Rubber & Asbestos Corp., 225 Belleville Ave., Bloomfield, N. J.
Sauereisen Cements Co., Sauereisen Bldg., Pittsburgh 15, Pa.
Shell Chemical Corp., Chemical Sales Div., 380 Madison Ave., New York, N. Y.
Sonneborn Sons, Inc., L., 404 Fourth Ave., New York 16, N. Y.
U B S Chemical Corp., 491 Main St., Cambridge 42, Mass.
U. S. Stoneware Co., Akron 9, Ohio
Varnitan Co., 416 N. Varney St., Burbank, Calif.
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.

ADSORBENTS

Aluminum Co. of America, Alcoa Bldg., Pittsburgh 19, Pa.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bio-Rad Laboratories, 1257 S. 32nd St., Richmond, Calif.
Emerson & Cuming, Inc., 869 Washington St., Canton, Mass.
Johns-Manville, 22 E. 40th St., New York 16, N. Y.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32

AGGREGATES—Concrete

AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
Johns-Manville, 22 E. 40th St., New York 16, N. Y.
Sonneborn Sons, Inc., L., 404 Fourth Ave., New York 16, N. Y.
Victor Chemical Works, 155 N. Wacker Drive, Chicago, Ill.

AIR CLEANING SYSTEMS

Air & Refrigeration Corp., 439 Madison Ave., New York 17, N. Y.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
American Air Filter Co., 215 Central Ave., Louisville 8, Ky.
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
FLANDERS FILTERS, INC., Riverhead, N. Y. ADV. PG. 236
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Industrial Plastic Fabricators, Endicott St., Norwood, Mass.
Joy Mfg. Co., Oliver Bldg., Pittsburgh 22, Pa.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Leavitt Machine Co., 10 E. River St., Orange, Mass.
Leonard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32

Trjon, Inc., 1000 Island Ave., McKees Rocks, Pa.
Yerzley & Co., 744 Broad St., Newark 2, N. J.

AIR CONDITIONING UNITS

See also BLOWERS

American Air Filter Co., 215 Central Ave., Louisville 8, Ky.
American Blower Div., American Radiator & Standard Corp., 8111 Tireman Ave., Dearbon, Mich.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Clarage Fan Co., 719 Porter St., Kalamazoo, Mich.
Dunham-Bush, Inc., 179 South St., West Hartford 10, Conn.
Ellis and Watts Products, Inc., Monroe at Spencer, Cincinnati 36 (Rossmoyne), Ohio
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Remington Air Conditioning Div. of Remington Corp., Willey St., Auburn, N. Y.
Surface Combustion Corp., 2375 Dorr St., Toledo 1, Ohio
Trane Company, The, La Crosse, Wis.
United Aircraft Products, Inc., 1116 Bolander St, Dayton, Ohio
Worthington Corp., Harrison, N. J.
York Corp., York, Pa.
Young Radiator Co., 709 S. Marquette St., Racine, Wis.

AIR FILTERS

See FILTERS—Air

ALARMS

See ANNUNCIATORS & ALARMS

ALLOYS

See METALS

ALPHA PARTICLE SOURCES

See ISOTOPES—Radioactive

AMMETERS—Contact

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio **ADV. PG. 230**
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium **ADV. PG. 241**
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Esterline-Angus Co., Inc., P. O. Box 596, Indianapolis 6, Ind.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. **ADV. PG. 37-39**
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Pyrometer Instrument Co., Inc., Bergenfield, N. J.
Simpson Electric Co., Div. of American Gage & Machine Co., 5208 W. Kinzie St., Chicago 44, Ill.
Waters Manufacturing, Inc., Boston Post Rd., Wayland, Mass.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.

AMMETERS (> ½ amp.)

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio **ADV. PG. 230**
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
ELOMAG SPRL Avenue Wellington 2, Brussels, Belgium **ADV. PG. 241**
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. **ADV. PG. 37-39**
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Helipot Div. of Beckman Instruments, Fullerton, Calif.
Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland 8, Ohio
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Meters, Inc., 5353 N. Keystone Ave., Indianapolis 20, Ind.
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. **ADV. PG. 198, 199**
Pace Electrical Instruments Co., Inc., 70-31 84th St., Glendale 27, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven Holland **ADV. PG. 86**
PHYSICS RESEARCH LABORATORIES, P. O. Box 555, Hempstead, N. Y. **ADV. PG. 166**
Precision Apparatus Co., Inc., 70—31 84th St., Glendale 27, N. Y.
Q.V.S. Inc., 20 N. 15th St., East Orange, N. J.
Shurite Meters, 35 Hamilton St., New Haven 8, Conn.
Simpson Electric Co., Div. of American Gage & Machine Co., 5208 W. Kinzie St., Chicago 44, Ill.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. **ADV. PG. 7-10**
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.
Winslow Co., Inc., 705 Lehigh Ave., P. O. Box 394, Union, N. J.

AMMETERS—Micro-Micro

Beckman/Scientific & Process Instruments Div., Beckman Instruments, Inc., 2500 Fullerton Rd., Fullerton, Calif.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Bruel & Kjaer, Naerum, Denmark
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. **ADV. PG. 220**
Elliott Brothers (London) Ltd., Century Works., Lewisham, London, S. E. 13, England
Epic, Inc., 154 Nassau St., New York 38, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. **ADV. PG. 37-39**
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. **ADV. PG. 254**
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
KEITHLEY INSTRUMENTS, INC., 12415 Euclid Ave., Cleveland 6, Ohio **ADV. PG. 104**
Kin Tel, 5725 Kearny Villa Rd., San Diego 11, Calif.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. **ADV. PG. 72, 73**
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Boston Div., 40 Life St., Boston 35, Mass.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V. Eindhoven, Holland **ADV. PG. 86**
Simpson Electric Co., Div. of American Gage & Machine Co., 5208 W Kinzie St., Chicago 44, Ill.
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. **ADV. PG. 255**
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.

AMMETERS—Milli & Micro

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio **ADV. PG. 230**
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
CAMBRIDGE INSTRUMENT CO., INC., 3107 Grand Central Terminal, New York 17, N. Y. **ADV. PG. 237**
Continental Connector Corp., Div. of DeJur-Amsco Corp, Woodside 77, N. Y.
Elcor, Inc., Box 354, McLean, Va.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London S, S. E. 13, England
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium **ADV. PG. 241**
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Fielden Electronics, Ltd., Paston Rd., Whythenshawe, Manchester, England
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. **ADV. PG 37-39**
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill **ADV. PG. 254**
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland 8, Ohio
International Instruments, Inc., P. O. Box 2954, New Haven 15, Conn.
Kin Tel, 5725 Kearny Villa Rd., San Diego 11, Calif.
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Marion Electrical Instrument Co., Grenier Field, Manchester, N. H.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Meters, Inc., 5353 N. Keystone Ave., Indianapolis 20, Ind.
Minneapolis-Honeywell Boston Div., 40 Life St., Boston 35, Mass.
Nash & Thompson, Ltd., Oakcroft Rd., Chessington, Surrey, England
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. **ADV. PG. 198, 199**
Pace Electrical Instruments Co., Inc., 70—31 84th St., Glendale 27, N. Y.
Phaostron Instrument & Electronic Co., 151 Pasadena Ave., South Pasadena Calif.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven Holland. **ADV. PG. 86**
PHYSICS RESEARCH LABORATORIES, P. O. Box 555, Hempstead, N. Y. **ADV. PG. 166**
Precision Apparatus Co., Inc., 70—31 84th St., Glendale 27, N. Y.
Q.V.S., Inc., 20 N. 15th St., East Orange, N. J.
RADIO CORPORATION OF AMERICA, TUBE DIV., 415 S. Fifth St., Harrison, N. J. **ADV. PG. 170**
RAWSON ELECTRICAL INSTRUMENT CO., 114 Potter St., Cambridge 42, Mass. **ADV. PG. 247**
Shurite Meters, 35 Hamilton St., New Haven 8, Conn.
Simpson Electric Co., Div. of America Gage & Machine Co., 5208 W. Kinzie St., Chicago 44, Ill.
Sterling Mfg. Co., 7201 Wentworth Ave., Cleveland 2, Ohio
Triplett Electrical Instrument Co., 286 Harmon Rd., Bluffton, Ohio
Waters Manufacturing, Inc., Boston Post Rd., Wayland, Mass.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. **ADV. PG. 7-10**
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.
Winslow Co., Inc., 705 Lehigh Ave., P. O. Box 394, Union, N. J.

AMPLIFIERS—A-C

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.
Airborne Accessories Corp., 1414 Chestunt Ave., Hillside 5, N. J.
American Electronic Laboratories, Inc., 121 N. 7th St., Philadelphia 6, Pa.
Amplifier Corp. of America, 396 Broadway, New York 13, N. Y.
Barker & Williamson, Inc., Canal & Beaver, Bristol, Pa.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. **ADV. PG. 144, 145**
Bogen Co., David, Dept. MHN, P. O. Box 500, Paramus, N. J.
Bruel & Kjaer, Naerum, Denmark
Brush Instruments Div. of Clevite Corp., 3405 Perkins Ave., Cleveland 14, Ohio
Century Electronics & Instruments, Inc., P. O. Box 6216, Tulsa 10, Okla.
Chicago Aerial Industries, Inc., 1980 Hawthorne Ave., Melrose Park, Ill.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. **ADV. PG. 220**
Daven Co., The, Route 10, Livingston, N. J.
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England **ADV. PG. 236**
Electro Measurements, Inc., 7524 SW Macadam Ave., Portland, Ore.
Engineered Electronics Co., 506 E. First St., Santa Ana, Calif.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y **ADV. PG. 37-39**
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
Genisco, Inc., 2233 Federal Ave., Los Angeles 64, Calif.
Greibach Instruments Corp., 315 North Ave., New Rochelle, N. Y.
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. **ADV. PG. 254**
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. **ADV. PG Second Cover**
Heath Co., Benton Harbor, Mich.
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
Industrial Test Equipment Co., 55 E. 11th St., New York 3, N. Y.
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58, N. Y. **ADV. PG. 227**
ISOTOPE DEVELOPMENTS, LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England **ADV. PG. 226**
J-B-T Instruments, Inc., 133 Hamilton St., New Haven 8, Conn.
KEITHLEY INSTRUMENTS, INC., 12115 Euclid Ave., Cleveland 6, Ohio **ADV. PG. 104**
Kellogg Switchboard & Supply Co., IT&T Div., 6650 S. Cicero Ave., Chicago 38, Ill.
Land Air, Inc., 2133 Adams Ave., San Leandro, Calif.
Lel, Inc., 380 Oak St., Copiague, N. Y.
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N. Y.
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Boston Div., 40 Life St., Boston 35, Mass.
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. **ADV. PG. 40**
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland **ADV. PG. 86**

Photron Instrument Co., 6516 Detroit Ave., Cleveland 2, Ohio
RADIATION INSTRUMENT CO., P. O. Box 733, Silver Spring, Md. ADV. PG. 250
Radio City Products Co., Inc., Centre & Glendale Sts., Easton, Pa.
Reeves Instrument Corp., Roosevelt Field, Garden City, N. Y.
Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Scott, Inc., H. H., 111 Powdermill Road, Maynard, Mass.
Stoelting Co., C. H., 424 N. Homan Ave., Chicago 24, Ill.
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Tektronix, Inc., P. O. Box 831, Portland 7, Ore.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Walkirt Co., The, 141 W. Hazel St., Inglewood 3, Calif.
Wheeler Electronic Corp., Sub. of Sperry Rand Corp., 150 E. Aurora St., Waterbury 20, Conn.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

AMPLIFIERS—D-C

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Airborne Accessories Corp., 1414 Chestnut Ave., Hillside 5, N. J.
Airmec, Ltd., High Wycombe, Buckinghamshire, England
Airpax Products Co., Seminole Div., Fort Lauderdale, Fal.
Allegany Instrument Co., Inc., Cumberland, Md.
American Electronic Laboratories, Inc., 121 N. 7th St., Philadelphia 6, Pa.
APPLIED PHYSICS CORP., 2724 S. Peck Rd., Monrovia, Calif. ADV. PG. 210
Barker & Williamson, Inc., Canal & Beaver, Bristol, Pa.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG 144, 145
Bogen Co., David, Dept. MHN, P. O. Box 500, Paramus, N. J.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Brush Instruments Div. of Clevite Corp., 3405 Perkins Ave., Cleveland 14, Ohio
Centralab Div. of Globe-Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.
Chicago Aerial Industries, Inc., 1980 Hawthorne Ave., Melrose Park, Ill.
Colorado Research Corp., Broomfield Heights, Colo.
Consolidated Controls Corp., Durant Ave., Bethel, Conn.
Cossor Instruments, Ltd., Cossor House, Highbury Grove, London, N5, England
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Data-Control Systems, Inc., 39 Rose St., Danbury, Conn.
Daven Co., The, Route 10, Livingston, N. J.
Donner Scientific Corp., 888 Galindo St., Concord, Calif.
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
Edin Co., A Div. of Epsco, Inc., 207 Main St., Worcester, Mass.
Elcor, Inc., Box 354, McLean, Va.
Electronic Associates, Inc., Long Branch, N. J.
Electronic Tube Corp., 1200 E. Mermaid Lane, Philadelphia 18, Pa.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
El-Tronics, Inc., Suburban Station Bldg., Philadelphia, Pa.
Engineered Electronics Co., 506 E. First St., Santa Ana, Calif.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
Genisco, Inc., 2233 Federal Ave., Los Angeles 64, Calif.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Hydel, Inc., 99 First St., Cambridge 41, Mass.
Industrial Instrument Div., Mandrel Industries, Inc., 5134 Glenmont, Houston, Texas
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58, N. Y. ADV. PG. 227
ISOTOPE DEVELOPMENTS LTD., Beeham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
Jordan Electronics A Div. of The Victoreen Instrument Co., 3025 W. Mission Rd., Alhambra, Calif.
KEITHLEY INSTRUMENTS, INC., 12415 Euclid Ave., Cleveland 6, Ohio ADV. PG. 104
Kellogg Switchboard & Supply Co., IT&T Div., 6650 S. Cicero Ave., Chicago 38, Ill.
Kin Tel, 5725 Kearny Villa Rd., San Diego 11, Calif.
Krohn-Hite Corp., 580 Massachusetts Ave., Cambridge 39, Mass.
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
Lel, Inc., 380 Oak St., Copiague, N. Y.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Magnetic Amplifiers, Inc., 632 Tinton Ave., Bronx 55, N. Y.
Magnetic Instruments Co., Inc., 546 Commerce St., Thornwood, N. Y.
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
Measurement Engineering Ltd., Arnprior, Ontario, Canada
Mid-Century Instrumatic Corp., 611 Broadway, New York 12, N. Y.
Minneapolis-Honeywell Boston Div., 40 Life St., Boston 35, Mass.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Neutronics Research Co., 165 Lake St., Waltham, Mass.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey), England
Ohmart Corp., 2236 Bogen St., P. O. Box 67, Sta. B, Cincinnati 22, Ohio
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Phoenix Precision Instrument Co., 3803-05 N. 5th St., Philadelphia, Pa.
Photocon Research Products, 421 N. Foothill Blvd., Pasadena 7, Calif.
Photron Instrument Co., 6516 Detroit Ave., Cleveland 2, Ohio
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35
Process & Instruments, 15 Stone Ave., Brooklyn 33, N. Y.
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Rank Cintel Ltd., Worsley Bridge Rd., London, S. E. 26, England
Reeves Instrument Corp., Roosevelt Field, Garden City, N. Y.
Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Servo-Tek Products Co., 1086 Goffle Rd., Hawthorne, N. J.
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
Statham Instruments Inc., 12401 W. Olympic blvd., Los Angeles 64, Calif.
Stoelting Co., C. H. 424 N. Homan Ave., Chicago 24, Ill.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Tektronix, Inc., P. O. Box 831, Portland 7, Ore.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
UNIVERSAL ATOMICS, DIV. OF UNIVERSAL TRANSISTOR PRODUCTS CORP., 17 Brooklyn Ave., Westbury, N. Y. ADV. PG. 194
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.
Wheeler Electronic Corp., Sub. of Sperry Rand Corp., 150 E. Aurora St., Waterbury 20, Conn.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

AMPLIFIERS—Linear

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, 1234 Air Way, Glendale, Calif.
AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Island City 6, N. Y. ADV. PG. 186
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
Barker & Williamson, Inc., Canal & Beaver, Bristol, Pa.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Beva Laboratory, 22 Parker Ave., P. O. Box 478, Trenton 3, N. J.
Bruel & Kjaer, Naerum, Denmark
Century Electronics & Instruments, Inc., P. O. Box 6216, Tulsa 10, Okla.
Chicago Aerial Industries, Inc., 1980 Hawthorne Ave., Melrose Park, Ill.
CONSOLIDATED ELECTRODYNAMICS CORP., 3300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Data-Control Systems, Inc., 39 Rose St., Danbury, Conn.
Daven Co., The, Route 10, Livingston, N. J.
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
Dynatron Radio, Ltd., St. Peter's Rd., Furze Platt, Maidenhead, Berks, England
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
ELDORADO ELECTRONICS CO., 2821 10th St., Berkeley, Calif. ADV. PG. 232
Electronic Associates, Inc., Long Branch, N. J.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Engineered Electronics Co., 506 E. First St., Santa Ana, Calif.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Franklin Electronics, Inc., E. Fourth St., Bridgeport, Pa.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Radiological Ltd., 15—18 Clipstone St., London, W. 1, England
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
Helland Div. of Minneapolis-Honeywell Regulator Co., 5200 E. Evans Ave., Denver 22, Colo.
Industrial Test Equipment Co., 55 E. 11th St., New York 3, N. Y.
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58, N. Y. ADV. PG. 227
ISOTOPE DEVELOPMENTS LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG 268
Johnson Co. E. F. Waseca Minn.
KEITHLEY INSTRUMENTS, INC., 12415 Euclid Ave., Cleveland 6, Ohio. ADV. PG. 104
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
Land Air, Inc., 2133 Adams Ave., San Leandro, Calif.
Lel, Inc., 380 Oak St., Copiague, N. Y.
LIBRASCOPE INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Mid-Century Instrumatic Corp., 611 Broadway, New York 12, N. Y.
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Minneapolis-Honeywell Regulator Co., 10721 Hanna St., Beltsville, Md.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Neutronics Laboratory, Tinley Park, Ill.
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Nuclear Enterprises (G.B.) Ltd., Sighthill, Edinburgh, Scotland
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey), England
PACKARD INSTRUMENT CO., INC., P. O. Box 428, La Grange, Ill. ADV. PG. 82
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Phoenix Precision Instrument Co., 3803—05 N. 5th St., Philadelphia, Pa.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT CO., P. O. Box 733, Silver Spring, Md. ADV. PG. 250
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Radio City Products Co., Inc., Centre & Glendale Sts., Easton, Pa.

Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Scott, Inc., H. H., 111 Powder Mill Rd., Maynard, Mass.
Societe D'Applications Industrielles de la Physique (S.A.I.P.) 146 Bd. de Charonne, Paris, France
Standard Electronics Div. of Radio Engineering Labs., Inc., 29—01 Borden Ave., Long Island City 1, N. Y.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Trott Electronics, Inc. 412 Smith St. Rochester 6, N. Y.
TULLAMORE ELECTRONICS LABORATORY, 6033 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

AMPLIFIERS—Logarithmic

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Audio Instrument Co., Inc., 135 N. W. 14th St., New York 11, N. Y.
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana Calif. ADV. PG. 81
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Chicago Aerial Industries, Inc., 1980 Hawthorne Ave., Melrose Park, Ill.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Daven Co., The, Route 10, Livingston, N. J.
Electronic Associates, Inc. Long Branch, N. J.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Fleming Radio (Developments), Ltd., Stevenage, Herts, England, U. K.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Radiological, Ltd., 15—18 Clipstone St., London, W. 1, England
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58, N. Y. ADV. PG. 227
ISOTOPE DEVELOPMENTS LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
KEITHLEY INSTRUMENTS, INC., 12415 Euclid Ave., Cleveland 6, Ohio. ADV. PG. 104
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
Lel, Inc., 380 Oak St., Copiague, N. Y.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., 10721 Hanna St., Beltsville, Md.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Moseley Co., F. L., 409 N. Fair Oaks Ave., Pasadena, Calif.
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Phoenix Precision Instrument Co., 3803—05 N. 5th St., Philadelphia, Pa.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Radio City Products Co., Inc., Centre & Glendale Sts., Easton, Pa.
Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W.C. 2, England
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
TULLAMORE ELECTRONICS LABORATORY, 6033 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203

AMPLIFIERS—Magnetic

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Airborne Accessories Corp., 1414 Chestnut Ave., Hillside 5, N. J.
Airpax Products Co., Seminole Div., Fort Lauderdale, Fla.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
Belock Instrument Corp., 111—01 14th Ave., College Point, N. Y.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bush Transformer Corp., 707 North St., Endicott, N. Y.
CGS Laboratories, Inc., Ridgefield, Conn.
Chicago Aerial Industries, Inc., 1980 Hawthorne Ave., Melrose Park, Ill.
Communication Accessories Co., Lee's Summit, Mo.
Consolidated Controls Corp., Durant Ave., Bethel, Conn.
Constantine Engineering Laboratories Co., 70 Island Ave., Mahwah, N. J.
Control A Div. of Magnetics, Inc., Box 391, Butler, Pa.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
D & R, Ltd., 402 E. Gutierrez St., Santa Barbara, Calif.
Detroit Controls Div. of American-Standard, 100 Morse St., Norwood, Mass.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Freed Transformer Co., Inc., 1736 Weirfield St., Brooklyn 27, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
General Magnetics, Inc., 135 Bloomfield Ave., Bloomfield, N. J.
Goslin Electric & Mfg. Co., 2921 W. Olive St., Burbank, Calif.
Gulton Industries, Durham Ave., Metuchen, N. J.
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58, N. Y. ADV. PG. 227
Kearfott Co., Inc., Engineering & Sales Div., 1378 Main Ave., Clifton, N. J.
KEPCO LABORATORIES, INC., 131—138 Sanford Ave., Flushing 55, N. Y. ADV. PG. 179
Ketay Dept., Norden Div. of United Aircraft Corp., Jericho Turnpike, Commack, N. Y.
Keystone Products Co., 904-6 23rd St., Union City, N. J.
Lee Electric & Mfg. Co., 2806 Clearwater St., Los Angeles 39, Calif.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N. Y.
Maxson Instruments, 47—37 Austell Place, Long Island City 1, N. Y.
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Minitran Corp., 5 Oliver St., Newark 2, N. J.
Minneapolis-Honeywell Boston Div., 40 Life St., Boston 35, Mass.
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
Ortho Filter Corp., 198 Albion Ave., Paterson 2, N. J.
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Perkin Engineering Corp., 345 Kansas St., El Segundo, Calif.
Polyphase Instrument Co., East 4th St., Bridgeport, Pa.
RADIATION COUNTER LABS INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
Raytheon Mfg. Co., Nuclear Power Group, 28 Seyon St., Waltham 54, Mass.
Rytron Co., Inc., 7303 Lankershim Blvd., North Hollywood, Calif.
Sangamo Electric Co., Electronics Div., Springfield, Ill.
Sickles Div., F. W., General Instrument Corp., 165 Front St., Chicopee, Mass.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Torwico Electronics, Inc., 1090 Morris Ave., Union, N. J.
Transformers, Inc., 200 Stage Rd., Vestal, N.Y.
Transonic, Inc., 808 16th St., Box 59, Bakersfield, Calif.
Tresco, Inc., 3824 Terrace St., Philadelphia 28, Pa.
United Transformer Corp., 150 Varick St., New York 13, N. Y.
Varl-L Co., Inc., P. O. Box 1433, Stamford, Conn.
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10
Wheeler Electronic Corp., Sub. of Sperry Rand Corp., 150 E. Aurora St., Waterbury 20, Conn.

AMPLIFIERS—Servo

AEG—ABT KEA Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, 1234 Air Way, Glendale, Calif.
Airpax Products Co., Seminole Div., Fort Lauderdale, Fla.
Askania Regulator Co., 240 E. Ontario St., Chicago 11, Ill.
Automatic Timing & Controls, Inc., King of Prussia, Pa.
Belock Instrument Corp., 111—01 14th Ave., College Point, N. Y.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Brush Instruments Div. of Clevite Corp., 3405 Perkins Ave., Cleveland 14, Ohio
Canadian Applied Research, Ltd., 1500 O'Connor Drive, Toronto 16, Ontario, Canada
Chicago Aerial Industries, Inc., 1980 Hawthorne Ave., Melrose Park, Ill.
Colorado Research Corp., Broomfield Heights, Colo.
Consolidated Controls Corp., Durant Ave. Bethel, Conn.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Detroit Controls Div. of American-Standard, 100 Morse St., Norwood, Mass.
DI-AN Controls, Inc., 40 Leon St., Boston 15, Mass.
Edison Industries, Thomas A., Instrument Div., West Orange, N. J.
Electronic Associates, Inc., Long Branch, N. J.
Elliott Brothers (London) Ltd., Century Works Lewisham, London, S. E., 13, England
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Magnetics, Inc., 135 Bloomfield Ave., Bloomfield, N. J.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Hydel, Inc., 99 First St., Cambridge 41, Mass.
Industrial Instruments Div., Mandrel Industries, Inc., 5134 Glenmont, Houston, Texas
Industrial Test Equipment Co., 55 E. 11th St., New York 3, N. Y.
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58, N. Y. ADV. PG. 227
Kearfott Co., Inc., Engineering & Sales Div., 1378 Main Ave., Clifton, N. J.
Ketay Dept., Norden Div. of United Aircraft Corp., Jericho Turnpike, Commack, N. Y.
Keystone Products Co., 904—6 23rd St., Union City, N. J.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Link Aviation, Inc., Binghamton N. Y.
Litton Industries 336 N. Foothill Rd., Beverly Hills, Calif.
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N. Y.
Magnetic Instruments Co., Inc., 546 Commerce St., Thornwood, N. Y.
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Maxson Instruments, 47—37 Austell Place, Long Island City 1, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Mid-Century Instrumatic Corp., 611 Broadway, New York 12, N. Y.
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Minitran Corp., 5 Oliver St., Newark 2, N. J.
Minneapolis-Honeywell Boston Div., 40 Life St., Boston 35, Mass.
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Muirhead & Co., Ltd., Beckenham Kent England
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
Oster Mfg. Co., John, Avionic Div., 1 Main St., Racine, Wis.
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
Phoenix Precision Instrument Co., 3803—05 N. 5th St., Philadelphia, Pa.
Raytheon Mfg. Co., Nuclear Power Group, 28 Seyon St., Waltham 54, Mass.
Reeves Instrument Corp., Roosevelt Field, Garden City, N. Y.
Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Schaevitz Engineering, P. O. Box 505, Camden 1, N. J.
Servo-Tek Products Co., 1086 Goffle Rd., Hawthorne, N. Y.
Sperry Gyroscope Div. of Sperry-Rand Corp., Great Neck, N. Y.
Stoelting Co., C. H., 424 N. Homan Ave., Chicago 24, Ill.

Stromberg-Carlson Div. General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Ten Bosch, Inc., M., 80 Wheeler Ave., Pleasantville, N. Y.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Turwico Electronics, Inc., 1090 Morris Ave., Union, N. J.
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 205
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Western Gear Corp., P. O. Box 182, Lynwood, Calif.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

AMPLIFIERS—Wide-Band

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Airmec Ltd., High Wycombe, Buckinghamshire, England
Allegany Instrument Co., Inc., Cumberland, Md.
Arenberg Ultrasonic Lab., Inc., 94 Green St., Jamaica Plain 30, Mass.
Atlantic Research Corp., Electromechanical Div., Alexandria, Va.
Barker & Williamson, Inc., Canal & Beaver, Bristol, Pa.
Blonder-Tongue Laboratories, Inc., 9—25 Alling St., Newark 2, N. J.
CGS Laboratories, Inc., Ridgefield, Conn.
Chicago Aerial Industries, Inc., 1980 Hawthorne Ave., Melrose Park, Ill.
Clegg Laboratories Div. of Clegg, Inc., Ridgedale & Hanover Aves., Morristown, N. J.
Cossor Instruments, Ltd., Cossor House, Highbury Grove, London, N5, England
Daven Co., The, Route 10, Livingston, N. J.
E.M.I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
Electronic Assistance Corp., 20 Bridge Ave., Red Bank, N. J.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Geisler Laboratories, P. O. Box 252, Menlo Park, Calif.
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV PG. Second Cover
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
Hughes Products, Airport Station, Los Angeles 45, Calif.
Instruments for Industries, Inc., 150 Glen Cove Rd., Mineola, N. Y.
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58, N. Y. ADV. PG. 227
ISOTOPE DEVELOPMENTS LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
Lel, Inc., 380 Oak St., Copiague, N. Y.
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Neutronics Research Co., 165 Lake St., Waltham, Mass.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Nuclear Enterprises (G.B.) Ltd., Sighthill, Edinburgh, Scotland
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey) England
Photron Instrument Co., 6516 Detroit Ave., Cleveland 2, Ohio
RS Electronics Corp., 435 Portage Ave., Palo Alto, Calif.
RADIATION INSTRUMENT CO., P. O. Box 733, Silver Spring, Md. ADV. PG. 250
Radio City Products Co., Inc., Centre & Glendale Sts., Easton, Pa.
Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Scott, Inc., H. H., 111 Powdermill Road, Maynard, Mass.
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France.
Spencer-Kennedy Labs., Inc., 1320 Soldiers Field Rd., Boston 35, Mass.
Standard Electronics Div. of Radio Engineering Labs. Inc., 29—01 Borden Ave., Long Island City 1, N. Y.
Tektronix, Inc., P. O. Box 831, Portland 7, Ore.
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Tel-Instrument Electronics Corp., 728 Garden St., Carlstadt, N. J.
Wave Particle Corp., P. O. Box 252, Menlo Park, Calif.

ANALYSIS—Activation

See SERVICES

ANALYSIS—Beryllium

See SERVICES

ANALYSIS—Spectrographic

See SERVICES

ANALYSIS—Uranium & Radioisotope

See SERVICES

ANALYZERS—Coincidence and Anticoincidence

American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
Beva Laboratory, 22 Parker Ave., P. O. Box 478, Trenton 3, N. J.
Bruel & Kjaer, Naerum, Denmark
Dynatron Radio, Ltd., St. Peter's Rd., Furze Platt, Maidenhead, Berks, England
ELDORADO ELECTRONICS CO., 2821 10th St., Berkeley, Calif. ADV. PG. 232
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston, Ill. ADV. PG. 229
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
PACKARD INSTRUMENT CO., INC., P. O. Box 428, La Grange, Ill. ADV. PG. 82
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146 Bd. de Charrone, Paris, France
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas ADV. PG. 205
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157

ANALYZERS—Deutrium

Advanced Instruments, Inc., 46-N Kenneth St., Newton Highlands 61, Mass.
Gow-Mac Instrument Co., 100 Kings Rd., Madison, N. J.
Perkin-Elmer Corp., Main Ave., Norwalk, Conn.

ANALYZERS—Gas

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
Atomic Laboratories, Berkeley, Calif.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Beckman/Scientific & Process Instruments Div., Beckman Instruments, Inc., 2500 Fullerton Rd., Fullerton, Calif.
CAMBRIDGE INSTRUMENT CO., INC., 3107 Grand Central Terminal, New York 17, N. Y. ADV. PG. 237
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Custom Lubricant Co., 743 Dwight Way, Berkeley 10, Calif.
Davis Emergency Equipment Co., Davis Instrument Div. 47 Halleck St., Newark 4, N. J.
Devco Engineering Inc., Control Systems Div., Pier Lane West, Caldwell Townshio, Caldwell, N. J.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Ercona Corp., Scientific Instrument Div., 16 W. 46th St., New York 36, N. Y.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50, Pa.
Gow-Mac Instrument Co., 100 Kings Rd., Madison, N. J.
Industrial Instruments, Inc., 89 Commerce Rd., Cedar Grove, N. J.
ISOTOPE DEVELOPMENTS, LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
Johnnson-Williams, Inc., 2625 Park Blvd., Palo Alto 35, Calif.
Kruger Instruments, Harold, P. O. Box 164, San Gabriel, Calif.
Laboratory Equipment Corp., St. Joseph, Mich.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.
NRC EQUIPMENT CORP., A SUB. OF NATIONAL RESEARCH CORP., 88 Charlement St., Newton Highlands 61, Mass. ADV. PG. 159
National Instrument Labs., Inc., 828 Evarts St., N. E., Washington, D. C.
New Jersey Safety Equipment Co., Park Ave. at Garden State Pkwy., East Orange, N. J.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Booklyn 1, N. Y.
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Perkin-Elmer Corp., Main Ave., Norwalk, Conn.
Permutit Co., 50 W. 44th St., New York 36, N. Y.
Phoenix Precision Instrument Co., 3803—05 N. 5th St., Philadelphia, Pa.
Process & Instruments, 15 Stone Ave., Brooklyn 33, N. Y.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Taller & Cooper Inc., 75 Front St., Brooklyn, N. Y.
Victory Engineering Corp., 77 Springfield Rd., Union, N. J.

ANALYZERS—Pulse Height, Multichannel

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
BENDIX AVIATION CORP., CINCINNATI DIV., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Beva Laboratory, 22 Parker Ave., P. O. Box 478, Trenton 3, N. J.
DuMont Labs., Inc., Allen B., 760 Bloomfield Ave., Clifton, N. J.
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
ELDORADO ELECTRONICS CO., 2821 10th St., Berkeley, Calif. ADV. PG. 232
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston, Ill. ADV. PG. 229
Franklin Electronics, Inc., E. Fourth St., Bridgeport, Pa.
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Mullard Equipment Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Pacific Electro-Nuclear Corp., 11818 Teale St., Culver City, Calif.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
RADIATION COUNTER LABS., INC., 5122 W. Gove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St. Chicago 21, Ill. ADV. PG. 271
Societe D'Applications Industrielles de la Physique (S. A. I. P.), 146, Bd. de Charonne, Paris, France
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255

ANALYZERS—Pulse Height, Single Channel

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Island City 6, N. Y. ADV. PG. 186
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Berkeley Crystal Co., 1740 University Ave., Berkeley 3, Calif.
Beva Laboratory, 22 Parker Ave., P. O. Box 478, Trenton 3, N. J.
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
Dynatron Radio, Ltd., St. Peter's Rd., Furze Platt, Maidenhead, Berks, England
ELDORADO ELECTRONICS CO., 2821 10th St., Berkeley, Calif. ADV. PG. 232
Franklin Electronics, Inc., E Fourth St., Bridgeport, Pa.
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
ISOTOPE DEVELOPMENTS LTD., Beenham Grange, Aldermaston Wharf, nr. Reading Berks, England ADV. PG. 226
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254

Land Air, Inc., 2133 Adams Ave., San Leandro, Calif.
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
NRO Instrument Co., A Div. of Nuclear Corp. of Americ,a 9842 Manchester St., St. Louis 19, Mo.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG 91
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Nuclear Enterprises (G.B.) Ltd., Sighthill, Edinburgh, Scotland
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surey), England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 3, Ill. ADV. PG 255
VICTOREEN INSTRUMENT CO., 5806—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203

ANALYZERS—Spectrochemical

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
Applied Research Labs., Inc., P. O. Box 1710, Glendale 5, Calif.
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67—70
Bausch & Lomb Optical Co., 630 St. Paul St., Rochester 2, N. Y.
Beckman/Scientific & Process Instruments Div., Beckman Instruments, Inc., 2500 Fullerton Rd., Fullerton, Calif.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
E.M.I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
Neutronics Research Co., 165 Lake St., Waltham, Mass.
Phoenix Precision Instrument Co., 3803—05 N. 5th St., Philadelphia, Pa.
Sperry Gyroscope Div. of Sperry-Rand Corp., Great Neck, N. Y.

ANALYZERS—Time-of-Flight

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
BENDIX AVIATION CORP., CINCINNATI DIV., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Beva Laboratory, 22 Parker Ave., P. O. Box 478, Trenton 3, N. J.
ELDORADO ELECTRONICS CO., 2821 10th St., Berkeley, Calif. ADV. PG. 232
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255

ANNUNCIATORS & ALARMS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Autocall Co., Shelby, Ohio
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Edison, Industries, Thomas A., Instrument Div., West Orange, N. J.
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W.C. 2
Kahlenberg Bros. Co., 12th & Monroe Sts., Two Rivers, Wis.
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Photobell Co., Inc., 43 Vesey St., New York 7, N. Y.
RBM Div., Essex Wire Corp., 131 Godfrey, Longansport, Ind.
Scan Instrument Corp., 1811 W. Irving Park Rd., Chicago, Ill.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Taller & Cooper, Inc., 75 Front St., Brooklyn, N. Y.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Thompson Poducts, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Worner Electronic Devices, Rankin, Ill.

ASBESTOS—Filtering

See FILTERS—Asbestos

AUTOCLAVES

Adler's Metal Works, 1310 Germantown Ave., Philadelphia 22, Pa.
ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
American Instrument Co., Inc., 8030 Georgia Ave., Silver Springs, Md.
American Sterilizer Co., Box 420, Erie, Pa.
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
Autoclave Eng. Sales Corp., 2930 W. 22nd St., Erie, Pa.
BABCOCK WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
Baird & Tatlock (London) Ltd., Freshwater Rd., Chadwell Heath, Essex, England
BARNSTEAD STILL & STERILIZER CO., 84 Lanesville Terrace, Boston 31, Mass. ADV. PG. 227
Blaw-Knox Co., 300 Sixth Ave., N.D., Pittsburgh 22, Pa.
BLICKMAN, INC., S. 7900 Gregory Ave., Weehawken, N. J. ADV. PG. 190
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Chicago Bridge & Iron Co., 1305 W. 105th St., Chicago 43, Ill.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Controlled Atmosphere Enclosures Mfg. Co., 1016 E. 8th St., Jacksonville 6, Fla.
Doyle & Roth Mfg. Co., Inc., 136—50 24th St., Brooklyn 32, N. Y.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
General Alloys Co., 405 W. First St., Boston 27, Mass.
General Regulator Corp., 666 Fifth Ave., New York 19, N. Y.
GRAVER TANK & MFG. CO., INC., 4809 Tod Ave., East Chicago, Ind. ADV. PG. 195
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany
KELLEY & CO., O. G., 98 Taylor St., Dorchester, Mass. ADV. PG. 64, 65
Leader Iron Works, Inc., 2150 N. Jasper, Decatur, Ill.
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Parr Instrument Co., Moline, Ill.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
Smith Corp., A. O., 3533 N. 27th St., Milwaukee 1, Wis.
Steel & Alloy Tank Co., 1 Bessemer St., Newark 5, N. J.
Struthers-Wells Corp., Warren, Pa.
Tenso-Lab Inc., S. Buckhout St., Irvington-on-Hudson, N. Y.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England
Willamette Iron & Steel Co. 2800 N.W. Front Ave., Portland 10, Ore.

BADGES—Film

See DOSIMETERS—Film Badge

BALANCES—Analytical

Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67—70
Baird & Tatlock (London) Ltd., Freshwater Rd., Chadwell Heath, Essex, England
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50, Pa.
LaPine & Co., Arthur S., 6001 S. Knox Ave., Chicago 29, Ill.
METTLER INSTRUMENT CORP., Hightstown, N. J. ADV. PG. 150
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Ohaus Scale Corp., 1050 Commerce Ave., Union, N. J.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Standard Scientific Supply Corp., 808 Broadway, New York 3, N. Y.
Stanton Instruments, Ltd., 119 Oxford St., London, W. 1, England
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Thomas Co., Arthur H., Vine St. at Third, Box 779, Philadelphia 5, Pa.
Torsion Balance Co., 35 Monhegan St., Clifton, N. J.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England

BATHS—Constant Temperature

Advanced Instruments, Inc., 46-N Kenneth St., Newton Highlands 61, Mass.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St., Louis 12, Mo.
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
Baird & Tatlock (London) Ltd., Freshwater Rd., Chadwell Heath, Essex, England
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Cooper Co., D. C., 1467 S. Michigan Ave., Chicago, Ill.
Custom Lubricant Co., 743 Dwight Way, Berkeley 10, Calif.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Fisher Scientific Co., 709 Forbes St., Pittsburgh, 19, Pa.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
Harris (Engineers), Granta Terrace, Stapleford, Cambridge, England
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
Lapine & Co., Arthur S., 6001 S. Knox Ave., Chicago 29, Ill.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
Modern Laboratory Equipment Co., Dept. N, 1809—11 First Ave., New York 28, N. Y.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Pyrometer Instrument Co., Inc., Bergenfield, N. J.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Tenney Engineering, Inc., 1090 Springfield Rd., Union, N. J.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Thermo Electric Co., Inc., Saddle Brook, N. J.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England
Trop-Artic, Inc., 3000 S. Hackley St., Muncie, Ind.
Victory Engineering Corp., 77 Springfield Rd., Union, N. J.
Warren Corp., The, 2901 Brighton Rd., Pittsburgh 12, Pa.

BATTERIES—Electrochemical

Burgess Battery Co., Freeport, Ill.
Burndept Ltd., West St., Erith, Kent, U. K.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Mallory & Co., Inc., P. R., 58 S. Gray St., Indianapolis 6, Ind.
NATIONAL CARBON CO., DIV. OF UNION CARBIDE CORP., 30 E. 42nd St., New York 17, N. Y. ADV. PG. Fourth Cover
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Ray-O-Vac Co., Madison, Wis.
Yardney Electric Corp., 40 Leonard St., New York 13, N. Y.

BATTERIES—Nuclear

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
ATOMIC RESEARCH LABORATORY, 10717 Venice Blde., Los Angeles 34, Calif. ADV. PG. 237
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
Martin Co., The Nuclear Div., Mail J340, Baltimore 3, Md.
Ohmart Corp., 2236 Bogen St., P. O. Box 67, Sta. D, Cincinnati 22, Ohio

Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
RADIATION APPLICATIONS INC., 370 Lexington Ave., New York 17, N. Y. ADV. PG. 238
Radiation Research Corp., 1114 First Ave., New York, N. Y.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157

BEARINGS—Ball & Roller

Landis & Gyr, Inc., 45 W. 45th St., New York 36, N. Y.
Mallory & Co., Inc., P. R., 58 S. Gary St., Indianapolis 6, Ind.
NATIONAL BERYLLIA CORP., 4501 Dell Ave., North Bergen, N. J. ADV. PG 254
Miniature Precision Bearings, Inc., Keene, N. H.
Sunstrand-Turbo Div. of Sunstrand Machine Tool, Pacoima, Calif.

BELLOWS & EXPANSION JOINTS

Aeroquip Corp., Jackson, Mich
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Belfab Corp., The, Municipal Airport, Daytona Beach, Fla.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Breeze Corporations, Inc., 700 Liberty Ave., Union, N. J.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Burke & James, Inc., 321 S. Wabash, Chicago, Ill.
Chicago Gasket Co., 1271 W. North Ave., Chicago 22, Ill.
Croll-Reynolds Engineering Co., 17 John St., New York 38, N. Y.
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Flexaust Co., 100 Park Ave. New York 17, N. Y.
Flexonics Corp., 1315 S. Third Ave., Maywood, Ill.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
Glass Engineering Laboratories, 601 O'Neil Ave., Belmont, Calif.
Heraeus Gmbh, W. C., 12—14 Heraeusstr., Hanau, Germany
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Resistoflex Corp., Roseland, N. J.
ROBERTSHAW-FULTON CONTROLS CO., FULTON SYLPHON DIV., P. I. Box 400, Knoxville 1, Tenn. ADV. PG. 178
SOLAR AIRCRAFT CO., 2200 Pacific Highway, San Diego 12, Calif. ADV. PG. 143
Spincraft, Inc., 4158H W. State St., Milwaukee 8, Wis.
T.I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England ADV. PG. 66
U.S. Gasket Co., Plastics Div. of The Garlock Packing Co., 600 N. 10th St., Camden 1, N. J.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.
ZALLEA BROTHERS, 800 Locust St., Wilmington, Del. ADV. PG. 41

BETA GAGES

See GAGES—Thickness or Density, Radioactivity

BETA-RAY SOURCES

See ISOTOPES—Radioactive

BETATRONS

See ACCELERATORS

BLOWERS

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Air Marine Motors, Inc., 369 Bay View Ave., Amityville, N. Y.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
Amco Engineering Co., 7333 Ainslie St., Chicago 31, Ill.
American Agile Corp., P. O. Box 168, Bedford, Ohio
American Air Filter Co., 215 Central Ave., Louisville 8, Ky.
American Blower Div., American Radiator & Standard Corp., 6111 Tireman Ave., Dearborn, Mich.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
Breuer Electric Mfg. Co., 5100 N. Ravenswood Ave., Chicago 40, Ill.
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Clarage Fan Co., 719 Porter St., Kalamazoo, Mich.
Coppus Engineering Corp., 334 Park Ave., Worcester, Mass.
Dayton Electic Mfg. Co., 126 S. Oakley Blvd., Chicago 12, Ill.
Duralab Equipment Corp., 980 Linwood St., Brooklyn 8, N. Y.
Eastern Air Devices Inc., 385 Central Ave., Dover, N. H.
Eclipse Fuel Engineering Co., 1100 Buchanan, Rockford, Ill.
Elcor Div., The Scranton Corp., 4059 W. North Ave., Chicago 39, Ill.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Fasco Industries, Inc., Rochester 2, N. Y.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Hild Floor Machine Co., 1217 W. Washington Blvd., Chicago, Ill.
Ilg Electric Ventilating Co., 2850 N. Pulaski Rd., Chicago 41, Ill.
Imhof Ltd., Alfred, 112—116 New Oxford St., London, W. C. 1, England
Industrial Plastic Fabricators, Endicott St., Norwood, Mass.
Joy Mfg. Co., Oliver Bldg., Pittsburgh 22, Pa.
Lamson Corp., Syracuse 1, N. Y.
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Lindberg Engineering Co., 2450 W. Hubbard St., Chicago 12, Ill.
Martindale Electric Co., Box 617, Edgewater Branch, Cleveland 7, Ohio
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
New Jersey Safety Equipment Co., Park Ave. at Garden State Pkwy., East Orange, N. J.
Oster Mfg. Co., John, Avionic Div., 1 Main St., Racine, Wis.
Redmond Co., Inc., Owosso, Mich.
Research Vacuum Supply Co., 6712 N. Clark St., Chicago, Ill.
Roots-Connersville Blower Div., Dresser Industries, Inc., 9000 W. Mount St., Connersville, Ind.
Rotron Manufacturing Co., 7 Schoonmaker Lane, Woodstock, N. Y.
Sanders Associates, Inc., 95 Canal St., Nashua, N. H.
Small Motors, Inc., 2076 Elston Ave., Chicago 14, Ill.
Stanat Mfg. Co., Inc., 511 Shames Drive, Westbury, N. Y.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Torit Mfg. Co., Walnut & Exchange St., St. Paul, Minn.
Western Gear Corp., P. O. Box 182, Lynwood, Calif.

BLOWERS—Power Plant

Clarage Fan Co., 719 Porter St., Kalamazoo, Mich.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Joy Mfg. Co., Oliver Bldg., Pittsburgh 22, Pa.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio

BOOKS—Technical

Academic Press Inc., 111 Fifth Ave., New York 3, N. Y.
ADDISON-WESLEY PUBLISHING CO., INC., Reading, Mass. ADV. PG. 208
Atomic Laboratories, Berkeley, Calif.
Blakiston Div. of McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y.
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Chronical of United Nations Activities, The, Document Service, 234 W. 26th St, New York 1, N.Y.
Commerce Clearing House, 4025 W. Peterson Ave., Chicago 46, Ill.
Consultants Bureau, Inc., 227 W. 17th St., New York 11, N. Y.
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Interscience Publishers, Inc., 250 Fifth Ave., New York, N. Y.
Louisiana State University Press, Baton Rouge 3, La.
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Pergamon Press, Inc., 122 E. 55th St., New York 22, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Philosophical Library, 15 E. 40th St., New York 16, N. Y.
Prentice-Hall, Inc., Route 9W, Englewood Cliffs, N. J.
Readex Microprint Corp., 100 Fifth Ave., New York, N. Y.
Reinhold Publishing Corp., 430 Park Ave., New York 22, NY.
Sams & Co., Inc., Howard W., 2201 E. 46th St., Indianapolis 5, Ind.
Scientific Equipment Co., Box 5686, Indianapolis, 19, Ind.
Simmons-Boardman Publishing Co., 30 Church St., New York 7, N. Y.
Technical Dictionaries Co., Box 144, New York 31, N. Y.
United Catalog Publishers, Inc., 60 Madison Ave., Hempstead, N. Y.
University of California Press, Berkeley 4, Calif.
UNIVERSITY OF CHICAGO PRESS, 5750 Ellis Ave., Chicago 37, Ill. ADV. PG. 191
Van Nostrand Co., Inc., D., 120 Alexander St., Princeton, N. J.
Wiley & Sons Inc., John, 440 Fourth Ave., New York 16, N. Y.
Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, Ill.

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Allied Resinous Products, Inc., Box 620, Conneaut, Ohio
Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Aluminum Co. of America, Alcoa Bldg., Pittsburgh 19, Pa.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
American Potash & Chemical Corp., 3030 W. 6th St., Los Angeles 54, Calif.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn 7, N. Y.
Berk & Co., Inc., F. W., Park Place East, Wood Ridge, N. J.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Brooks & Perkins, Inc., 261 Constitution Ave., N. W. Washington, D. C.
Carborundum Co., The, Refractories Div., Perth Amboy, N. J.
CONNEAUT RUBBER & PLASTIC DIV. OF U. S. STONEWARE CO., Commerce St., Conneaut, Ohio ADV. PG. 97
Cooper Metallurgical Associates, Box 3991, Cleveland 20, Ohio
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Metals Research & Development, Inc., Tunkhannock Ave., Exeter, Pa.
NATIONAL CARBON CO., DIV. OF UNION CARBIDE CORP., 30 E. 42nd St., New York 17, N. Y. ADV. PG. Fourth Cover
NORTON CO., New Bond St., Worcester 6, Mass. ADV. PG. 77
Shamban & Co., W. S., 11617 W. Jefferson Blvd., Culver City, Calif.
SHIELDALLOY CORP., Newfield, N. J. ADV. PG. 256
Sintercast Corp. of America, 134 Woodworth Ave., Yonkers, N. Y.
Speer Carbon Co., St. Marys, Pa.
SUPERIOR STEEL DIV. OF COPPERWELD STEEL CO., Carnegie, Pa. ADV. PG. 12
SUPERIOR TUBE CO., Box 191, Norristown, Pa. ADV. PG. 71
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Twentieth Century Electronics Ltd., Centronics Works, King Henry's Drive, New Addington, Surrey, England
U. S. Borax & Chemical Corp., Pacific Coast Borax Co. Div., 50 Rockefeller Plaza, New York 20, N. Y.
U. S. Gasket Co., Plastics Div. of The Garlock Packing Co., 600 N. 10th St., Camden 1, N. J.
United States Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.

BOTTLES

See CONTAINERS

BOXES

See DRY BOXES

BRICK Radiation Shielding

Acme Brick Co., P. O. Box 425, Fort Worth 1, Texas
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
Allied Resinous Products, Inc., Box 620, Conneaut, Ohio
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ATOMIC ACCESSORIES INC., 244—04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada ADV. PG. 155
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
BAR-RAY PRODUCTS, INC., 209 29th St., Brooklyn 32, N. Y. ADV. PG. 103
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn 7, N. Y.
CAMBRIDGE SMELTING CO., 100 Pacific St., Cambridge, Mass. ADV. PG 238
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
Edlow Lead Co., 729 Bank St., Columbus 16, Ohio
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
General Lead Construction Corp., 1800 Harrison Ave., Kearny, N. J.
General Radiological Ltd., 15—18 Clipstone St., London, W. 1, England
Gladding, McBean & Co., 2901 Los Feliz Blvd., Los Angeles 39, Calif.

Glaser Lead Co., Inc., 31 Wyckoff Ave., Brooklyn 27, N. Y.
Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Pa.
Instruments, Inc., 122 N. Madison, P. O. Box 556, Tulsa, Okla.
Isotope Accessories Co., The, 5312 Westminster Ave., Philadelphia 31, Pa.
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
KELLEY & CO., O. G., 98 Taylor St., Dorchester, Mass. ADV. PG. 64, 65
Knapp Mills, Inc., 23—15 Borden Ave., Long Island City 1 N. Y.
LEAD PRODUCTS, INC., Hartford Rd., Manchester, Conn. ADV. PG. 238
METALS DISINTEGRATING CO., INC., P. O. Box 290, Elizabeth, N. J. ADV. PG. 237
NATIONAL BERYLLIA CORP., 4501 Dell Ave., North Bergen, N. J. ADV. PG. 254
National Lead Co., 111 Broadway, New York Y, N. Y.
NUCLEAD, INC., 110 Pacific St., Cambridge, Mass. ADV. PG. 238
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey) England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
RAY-PROOF CORP., 843 Canal St., Stamford, Conn. ADV. PG. 272
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Toronto Fire Brick Co., Stratton, Ohio
TRACERLAB INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG 151, 152, 157
Volk Radiochemical Co., 5412 N. Clark St., Chicago 40, Ill.

BUBBLE TRAYS

See SCRUBBERS—Gas

BURETTES

See also LABORATORY APPARATUS

BURETTES—Automatic

Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
Isotope Accessories Co., The, 5312 Westminster Ave,. Philadelphia 31, Pa.
Kontes Glass Co., Dept P-159, Vineland, N. J.
Laboratory Equipment Corp., St. Joseph, Mich.
Nuclear Science Associates, 55 Manor Drive, Newark 6, N. J.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England
Volk Radiochemical Co., 5412 N. Clark St., Chicago 40, Ill.
Will Corporation, Wilco Place, Box 1050, Rochester 3, N. Y.

CABINETS—Drying

Adler's Metal Works, 1310 Germantown Ave., Philadelphia 22, Pa.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
BLICKMAN, INC., S., 7900 Gregory Ave., Weehawken, N. J. ADV. PG. 190
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Cooper Co., D. C., 1467 S. Michigan Ave., Chicago, Ill.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Duralab Equipment Corp., 980 Linwood St., Brooklyn 8, N. Y.
Gallenkamp & Co., Ltd., A., Sun St., London E. C. 2, England
Hamilton Mfg. Co., Two Rivers, Wis.
Harriss (Engineers), Granta Terrace, Stapleford, Cambridge, England
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 144
Huppert Co., K. H., 6830 S. Cottage Grove Ave., Chicago 7, Ill.
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Lyndon Brothers, Inc., 85 Zabriskie St., Hackensack, N. J.
Metalab Equipment Co., Div. of Norbute Corp., 282 Duffy Ave., Hicksville, N. Y.
Modern Laboratory Equipment Co., Dept. N, 1809—11 First Ave. New York 28, N. Y.
National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35
Rockwell Co., W. S., 200 Eliot St., Fairfield, Conn.
Steiner-Ives Co., Springfield Rd., Union, N. J.
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England

CABINETS—Instrument

See CONSOLES & CABINETS

CAMERAS—Recording

Abrams Instrument Corp., 600—620 E. Shiawassee St., Lansing, Mich.
Allegany Instrument Co., Inc., Cumberland, Md.
Canadian Applied Research, Ltd., 1500 O'Connor Drive, Toronto 16, Ontario, Canada
Chicago Aerial Industries, Inc., 1980 Hawthorne Ave., Melrose Park, Ill.
Cossor Instruments, Ltd., Cossor House, Highbury Grove, London, N5, England
DuMont Labs., Inc., Allen B., 760 Bloomfield Ave., Clifton, N. J.
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
Eastman Kodak Co., 343 State St., Rochester 4, N. Y.
Electro Medical Lab., Inc., South Woodstock 6, Vt.
Ercona Corp., Scientific Instrument Div., 16 W. 46th St., New York 36, N. Y.
Fairchild Camera & Instrument Corp., Industrial Camera Div., 5 Aerial Way, Syosset, N. Y.
Itek Corp., 1605 Trapelo Rd., Waltham 54, Mass.
KOLLMORGEN OPTICAL CORP., 347 King St., Northampton Mass. ADV. PG. 167
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Nash & Thompson, Ltd., Oakcroft Rd., Chessington, Surrey, England
Peerless Instrument Co., Inc., 90—15 Corona Ave., Elmhurst 73, N. Y.
Telle & Cooper, Inc., 75 Front St., Brooklyn, N. Y.
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas
Wallace & Tiernan, Inc., 25 Main St., Belleville 9, N. J.
X-Ray Dept. of General Electric Co., 4855 Electric Ave., Milwaukee, Wis.

CAMERAS—X-Ray

See RADIOGRAPHIC EQUIPMENT—X-Ray

CAPACITORS

NOTE: Various types of capacitors are not indicated in this listing. Contact manufacturer for specific type (s) desired.
Airborne Accessories Corp., 1414 Chestnut Ave., Hillside 5, N. J.
Amp, Incorporated, Chemicals & Dielectrics Div., 155 Park St., Elizabethtown, Pa.
Astron Corp., 255 Grant Ave., East Newark, N. J.
Axel Bros., Inc., Electronics Div., 134—20 Jamaica Ave., Jamaica 18, N. Y.
Balco Research Labs., 49—53, Edison Place, Newark 2, N. J.
Barker & Williamson, Inc., Canal & Beaver, Bristol, Pa.
Bud Radio, Inc., 2118 E. 55th St., Cleveland 3, Ohio
Cardwell Condenser Corp., 97 Whiting St., Plainville, Conn.
Centralab Division of Globe-Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.
Condenser Products Div. of New Haven Clock & Watch Co., 140 Hamilton St., New Haven, Conn.
Cornell-Dubilier Electric Corp., South Plainfield, N. J.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
Erie Resistor Corp., 639 W. 12th St., Erie, Pa.
FANSTEEL METALLURGICAL CORP., North Chicago, Ill. ADV. PG. 172
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
Good-All Electric Mfg. Co., Good-All Bldg., Ogallala, Neb.
Gudeman Co., 340 W. Huron St., Chicago 10, Ill.
Gulton Industries, Durham Ave., Metuchen, N. J.
Industrial Condenser Corp., 3243 N. California Ave., Chicago 18, Ill.
International Rectifier Corp., 1521 E. Grand Ave., El Segundo, Calif.
Jeffers Electronics Div., Speer Carbon Co., DuBois, Pa.
Jennings Radio Mfg. Corp., 970 McLaughlin Ave., P. O. Box 1278, San Jose 12, Calif.
Johnson Co., E. F., Waseca, Minn.
LANDSVERK ELECTROMETER CO., 641 Sonora Ave., Glendale 1, Calif. ADV. PG. 209
Mallory & Co., Inc., P.R., 58 S. Gray St., Indianapolis 6, Ind.
Pacific Semiconductors, Inc., 10451 W. Jefferson Blvd., Culver City, Calif.
Ohmite Mfg. Co., 3601 Howard St., Skokie, Ill.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Plastic Capacitors, Inc., 2620 N. Clybourn Ave., Chicago 14, Ill.
Radiation Research Corp., 1114 First Ave., New York, N. Y.
Sangamo Eectric Co., Electronic Div., Springfield, Ill.
Sprague Electric Co., North Adams, Mass.
STEVENS-ARNOLD, INC., 7 Elkins St., Boston, Mass. ADV. PG. 160
Tansitor Electronics, Inc., West Road, Bennington, Vt.
TOBE DEUTSCHMANN CORP., Providence Highway, Norwood, Mass. ADV. PG. 214

CAPACITORS—High Voltage, Low Inductance

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.
Airborne Accessories Corp., 1414 Chestnut Ave., Hillside 5, N. J.
Astron Corp., 255 Grant Ave., East Newark, N. J.
Axel Bros., Inc., Electronics Div., 134—20 Jamaica Ave., Jamaica 18, N. Y.
Balco Research Labs., 49—53 Edison Place, Newark 2, N. J.
Centralab Div. of Globe-Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.
Condenser Products Div. of New Haven Clock & Watch Co., 140 Hamilton St., New Haven, Conn.
Cornell-Dubilier Electric Corp., South Plainfield, N. J.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Good-All Electric Mfg. Co., Good-All Bldg., Ogallala, Neb.
Gudeman Co., The, 340 W. Huron St., Chicago 10, Ill.
ITT Components Div., International Telephone & Telegraph Corp., P. O. Box 412, Clifton, N. J.
Industrial Condenser Corp., 3243 N. California Ave., Chicago 18, Ill.
Jennings Radio Mfg. Corp., 970 McLaughlin Ave., P. O. Box 1278, San Jose 12, Calif.
Johnson Co., E. F., Waseca, Minn.
Mallory & Co., Inc., P.R., 58 S. Gray St., Indianapolis 6, Ind.
Minnesota Mining & Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.
Plastic Capacitors, Inc., 2620 N. Clybourn Ave., Chicago 14, Ill.
Radiation Research Corp., 1114 First Ave., New York, N. Y.
Sangamo Electric Co., Electronics Div., Springfield, Ill.
Sprague Electric Co., North Adams, Mass.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas
TOBE DEUTSCHMANN CORP., Providence Highway, Norwood, Mass. ADV. PG. 214

CARBON

See GRAPHITE

CARBON—Radioactive

See ISOTOPES—Radioactive

CASTINGS

Austenal, Inc., 224 E. 39th St., New York 16, N. Y.
Bean & Co., Morris, Yellow Springs 19, Ohio
BONNEY-FLOYD CO., THE, 611 Marion Rd., Columbus 7, Ohio ADV. PG. 62
COOPER ALLOY CORP., Blov St & Ramsey Ave., Hillside 5 N. J. ADV. PG. 56
ELECTRIC STEEL FOUNDRY CO., 2149 N W 25th Ave., Portland 10, Ore. ADV. PG. 175
Leavitt Machine Co., 10 E. River St., Orange, Mass.
Lebanon Steel Foundry, Lebanon, Pa.
Oregon Metallurgical Corp., P. O. Box 484, Albany, Ore.
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
SANDUSKY FOUNDRY & MACHINE CO., W. Market St., Sandusky, Ohio ADV. PG. 147
U. S. PIPE & FOUNDRY CO., STEEL & TUBES DIV., Burlington, N. J. ADV. PG. 14, 15

WISCONSIN STAINLESS FOUNDRY & MACHINE CORP., 823 E. St. Paul Ave., Waukesha, Wis. ADV. PG. 255

CASTINGS—Cylindrical

See SHELLS—Cylindrical

CENTRIFUGES

Allied Engineering & Production Corp., 242 Blanding Ave.,, Alameda, Calif.
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
Baird & Tatlock (London) Ltd., Freshwater Rd., Chadwell Heath, Essex, England
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Clay-Adams, Inc., 141 E. 25th St., New York 10, N. Y.
Condenser Service & Engineering Co., Inc., 150 Observer Highway, Hoboken, N. J.
Custom Scientific Instruments, Inc., P. O. Box 170, Kearny, N. J.
Dorr-Oliver, Inc., Barry Place, Stamford, Conn.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
Franklin Electronics, Inc., E. Fourth St., Bridgeport, Pa.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
Genisco, Inc., 2233 Federal Ave., Los Angeles 64, Calif.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
International Equipment Co., 1284 Soldiers Field Rd., Boston 35, Mass.
Laboratory Equipment Corp., St. Joseph, Mich.
Magnavox Co., The, Fort Wayne, Ind.
Modern Laboratory Equipment Co., Dept. N, 1809—11 First Ave., New York 28, N. Y.
Niagara Filters Div. & Tolhurst Centrifugals Div., American Machine & Metals, Inc., East Moline, Ill.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
Phillips-Drucker, Route 1, P. O. Box 587, Astoria, Ore.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Schaevitz Engineering, P. O. Box 505, Camden 1, N. J.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Towers & Co., Ltd., J. W., Widnes, Lancs., England

CERAMICS

See also REFRACTORIES

Alite Div. of U. S. Stoneware Co., P. O. Box 119, Orville, Pa.
American Lava Corp., Titania Div., Manufacturers Rd., Chattanooga 5, Tenn.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bettinger Corp., Milford, Mass.
Carborundum Co., The, Refractories Div., Perth Amboy, N. J.
Centralab Div. of Globe-Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Erie Resistor Corp., 639 W. 12th St., Erie, Pa.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Frenchtown Porcelain Co., Frenchtown, N. J.
General Ceramics Corp., 250 Crows Mill Rd., Keasbey, N. J.
Gladding, McBean & Co., 2901 Los Feliz Blvd., Los Angeles 39, Calif.
Harbishaw-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Pa.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Hommel Co., O., 209 Fourth Ave., Pittsburgh, Pa.
Isolantite Mfg. Corp., Stirling, N. J.
Kearfott Co., Inc., Engineering & Sales Div., 1378 Main Ave., Clifton, N. J.
Kirchberger & Co., Inc., M., 82—92 W. Forest Ave., Englewood, N. J.
Knight Co., Maurice A., 171 Kelly Ave., Akron, Ohio
Lapp Insulator Co., Inc., 40 Gilbert St., Le Roy, N. Y.
Lindberg Engineering Co., 2450 W. Hubbard St., Chicago 12, Ill.
Louthan Mfg. Co., East Liverpool, Ohio
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Mitronics, Inc., 1200 Central Ave., Hillside, N. J.
Morganite, Inc., 58—02 48th Ave., Long Island City 1, N. Y.
NATIONAL BERYLLIA CORP., 4501 Dell Ave., North Bergen, N. J. ADV. PG. 254
NATIONAL CARBON CO., DIV. OF UNION CARBIDE CORP., 30 E. 42nd St., New York 17, N. Y. ADV. PG. Fourth Cover
NORTON CO., 1 New Bond St., Worcester 6, Mass. ADV. PG. 77
Nucear Metals, Inc., Concord, Mass.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Raytheon Mfg. Co., Ceramic Sales Dept., Foundry Ave., Waltham 54, Mass.
Saxonburg Ceramics, Saxonburg, Pa.
SOLAR AIRCRAFT CO., 2200 Pacific Highway, San Diego 12, Calif. ADV. PG. 143
Star Porcelain Co., The, P. O. Box 1329, Trenton 9, N. J.
Steward Mfg. Co., D. M., E. 36th St., Chattanooga 1, Tenn.
Technical Research Group, Inc., 2 Aerial Way, Syosset, N. Y.
U. S. Stoneware Co., Akron 9, Ohio
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.

CHAMBERS—Environmental Test

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Aireco Inc., 2323 Second Ave., Schenectady, N. Y.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
American Research Corp., Route 6, Farmington, Conn.
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
BLICKMAN, INC., S. 7980 Gregory Ave., Weehawken, N. J. ADV. PG. 190
BUDD CO., NUCLEAR SYSTEMS DIV., 2950 Roberts Ave., Philadelphia 32, Pa. ADV. PG. 187
Conrad Inc., 141 Jefferson St., Holland, Mich.
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Custom Scientific Instruments, Inc., P. O. Box 170, Kearny, N. J.
Environmental Equipment Corp., 369 Linden St., Brooklyn 27, N. Y.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
High Vacuum Equipment Corp., 2 Churchill Rd., Hingham, Mass.
Huppert Co., K. H., 6830 S. Cottage Grove Ave., Chicago 7, Ill.
Kinney Mfg. Div., The New York Air Brake Co., 3529 Washington St., Boston 30, Mass.
Koven Fabricators, Inc., 90 E. Dickerson St., Dover, N. J.
L&B Welding Equipment, Inc., 2424 6th St., Berkeley, Calif.
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Modern Laboratory Equipment Co., Dept. N, 1809—11 First Ave., New York 28, N. Y.
Murphy & Miller Inc., 624 W. Taylor St., Chicago 7, Ill.
NRC EQUIPMENT CORP., A SUB. OF NATIONAL RESEARCH CORP., 88 Charlemont St., Newton Highlands 61, Mass. ADV. PG. 159
National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 1, N. Y.
Philips Electronics, Inc., 730 S. Fulton Ave., Mt. Vernon, N. Y.
Radio Corporation of America, Industrial Electronic Products Div., Camden 2, N. J.
Standard Railway Equipment Mfg. Co., 200 S. Michigan Ave., Chicago 4, Ill.
Steiner-Ivet Co., Springfield Rd., Union, N. J.
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Tenney Engineering Inc., 1090 Springfield Rd., Union, N. J.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Webber Mfg. Co., Inc., P. O. Box 217, Indianapolis 6 Ind.
York Corp., York, Pa.

CHAMBERS—Fission

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMIC ACCESSORIES, INC., 244-04 Jamaica Ave., Bellrose 26, N. Y. ADV. PG. 247
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
JOHNSTON LABORATORIES, INC., WILLIAM H. Lafayette, Ind. ADV. PG. 254
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
Neutronics Laboratory, Tinley Park, Ill.
Westinghouse Electric Corp., Electronic Tube Div., Box 284, Elmira, N. Y.

CHAMBERS—Ionization, Alpha, Beta & Gamma

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Adler's Metal Works, 1310 Germantown Ave., Philadelphia 22, Pa.
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
APPLIED PHYSICS CORP., 2724 S. Peck Rd., Monrovia Calif. ADV. PG. 210
ATOMIC ACCESSORIES, INC., 244—04 Jamaica Ave., Bellrose 26, N. Y. ADV. PG. 247
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
Eberline Instrument Corp., P. O. Box 279, Santa Fe, N. Mex.
Eichner Instruments Co., L. C., 19 Sebago St., Clifton, N. J.
General Radiological, Ltd., 15—18 Clipstone St., London, W. 1, England
ISOTOPE DEVELOPMENTS LTD., Beenham Grange, Aldermaston Wharf nr. Reading, Berks, England ADV. PG. 226
ISOTOPE SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Inc. ADV. PG. 254
Jordan Electronics A Div. of the Vectoreen Instrument Co., 3025 W. Mission Rd., Alhambra, Calif.
Land Air, Inc., 2133 Adams Ave., San Leandro, Calif.
LANDSVERK ELECTROMETER CO., 641 Sonora Ave., Glendale 1, Calif. ADV. PG. 209
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Olmart Corp., 2236 Bogen St., P. O. Box 67, Sta. B, Cincinnati 22, Ohio
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
Research Specialties Co., 200 S. Garrard Blvd., Richmond, Calif.
Societe D'Applicatiens Industrielles de la Physique (S.A.I.P.), 146, Rd. de Charonne, Paris, France
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas ADV. PG. 205
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Vacuum Industrial Applications, Ltd., Netherton Rd., Wishaw Lanarkshire, Scotland
VICTOREEN INSTRUMENT CO., 5806—31 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Westinghouse Electric Corp., Electronic Tube Div., Box 284, Elmira, N. Y.
WOOD COUNTER LABORATORY, N., 1525 E. 53rd St., Chicago 15, Ill. ADV. PG. 207
X-Ray Dept. of General Electric Co., 4855 Electric Ave., Milwaukee, Wis.

CHAMBERS—Ionization, Neutron

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMIC ACCESSORIES, INC., 244—04 Jamaica Ave., Bellrose 26, N. Y. ADV. PG. 247
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. AD. PG. 149
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV PG. 37—39
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268

JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
LANDSVERK ELECTROMETER CO., 641 Sonora Ave., Glendale 1, Calif. ADV. PG. 209
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
Neutronics Laboratory, Tinley Park, Ill.
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
Reuter-Stokes Electronic Components, Inc., 2149 Hamilton Ave., Cleveland 14, Ohio
Societe D'Applications Industrielles de la Physique (S. A. I. P.), 146 Bd. de Charonne, Paris, France
TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas ADV. PG. 205
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54 Mass. ADV. PG. 151, 152, 157
VICTOREEN INSTRUMENT CO., 5800-11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Westinghouse Electric Corp., Electronic Tube Div., Box 284, Elmira, N. Y.
WOOD COUNTER LABORATORY, N., 1525 E. 53rd St., Chicago 15, Ill. ADV. PG. 207

CHARGERS—Dosimeter

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMIC ACCESSORIES INC., 244—04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34 Calif. ADV. PG. 237
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich ADV. PG. 144, 145
COSMIC INSTRUMENTS, INC., 50 Broadway, New York 4, N. Y. ADV. PG. 251
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
General Radiological, Ltd., 15—18 Clipstone St., London, W. 1, England
ISOTOPE DEVELOPMENTS LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
Jordan Electronics, A Div. of the Victoreen Instrument Co., 3025 W. Mission Rd., Alhambra, Calif.
LANDSVERK ELECTROMETER CO., 641 Sonora Ave., Glendale 1, Calif. ADV. PG. 209
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surrey), England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
Rank Cintel Ltd., Worsley Bridge Rd., London S. E. 26, England
Stephen & Co., Ltd., R. A., 120—126 Lavender Ave., Mitcham, Surrey, England
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
UNIVERSAL ATOMICS DIV. OF UNIVERSAL TRANSISTOR PRODUCTS CORP., 17 Brooklyn Ave., Westbury, N. Y. ADV. PG. 194
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Volk Radiochemical Co., 5412 N. Clark St., Chicago 40, Ill.

CHELATING AGENTS

See DECONTAMINANTS

CHEMICALS

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
Aluminum Co. of America, Alcoa Bldg., Pittsburgh 19, Pa.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36, N. Y.
American Potash & Chemical Corp., 3030 W. 6th St., Los Angeles 54, Calif.
Antara Chemicals, Div. of General Aniline & Film Corp., 435 Hudson St., New York 14, N. Y.
ARAPAHOE CHEMICALS, INC., 2800 Pearl St., Boulder, Colo. ADV. PG. 217
Baker & Adamson Products, General Chemical Div. of Allied Chemical Corp., 40 Rector St., New York 6, N. Y.
Baker Chemical Co., J. T., Phillipsburg, N. J.
Barium & Chemicals, Inc., Willoughby, Ohio
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn 7, N. Y.
Berk & Co., Inc., F. W., Park Place East, Wood Ridge, N. J.
Bio-Rad Laboratories, 1257 S. 32nd St., Richmond, Calif.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Borden Chemical Co., A Div. of The Borden Co., 350 Madison Ave., New York 17, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Brush Beryllium Co., 4301 Perkins Ave., Cleveland 3, Ohio
Chemical Commerce, 166 Clifford St., Newark, N. J.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Dajac Laboratories, The Borden Co., Chemical Div., Leominster, Mass.
DAVISON CHEMICAL DIV. OF W. R. GRACE CO., REACTOR MATERIALS PLANT, P. O. Box 210, Erwin, Tenn. ADV. PG. 154
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Dow Chemical Co., Midland, Mich.
Dow Corning Corp., Midland, Mich.
Du Pont de Nemours & Co., Inc., E. I., Wilmington 98, Del.
Eastern Chemical Corp., 34 Spring St., Newark 4, N. Y.
Eastman Kodak Co., 343 State St., Rochester 4, N. Y.
Emerson & Cuming, Inc., 869 Washington St., Canton, Mass.
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
Filo Color & Chemical Co., 347 Madison Ave., New York 17, N. Y.
Fine Chemical Co., 250 W. 57th St., New York 19, N. Y.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
Foote Mineral Co., 18 W. Chelten Ave., Philadelphia 44, Pa.
General Biochemicals Inc., Laboratory Park, Chagrin Falls, Ohio
General Cement Mfg. Co., Div. of Textron, Inc., 400 S. Wyman St., Rockford, Ill.
General Electric Co., Silicone Products Dept., Waterford, N. Y.
Goodrich Chemical Co., B. F., 3135 Euclid Ave., Cleveland 15, Ohio
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Heavy Minerals Co., 4000 N. Hawthorne St., Chattanooga, Tenn.
Hommel Co., O., 209 Fourth Ave., Pittsburgh, Pa.
Hooker Chemical Corp., 13 Iroquois St., Niagara Falls, N. Y.
Kawecki Chemical Co., Inc., 220 E. 42nd St., New York, N. Y.
Kessler Chemical Co., Inc., State Rd. & Cottman Ave., Philadelphia 35, Pa.
M S A Research Corp., Callery, Pa.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo.
MATHESON CO., 932 Paterson Plank Rd., East Rutherford, N. J. ADV. PG. 229
Maywood Chemical Works, 111 W. Hunter Ave., Maywood, N. J.
Merck & Co., Inc., Chemical Div., 126 E. Lincoln Ave., Rahway, N. J.
Merck & Co., Ltd., Research Chemicals Dept., 360 De Courcelle St., Montreal 3, P. Q., Canada
Metal Hydrides, Inc., 12-24 Congress St., Beverly, Mass.
Metal & Thermit Corp., Rahway, N. J.
Minnesota Mining & Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.
Minnesota Mining & Mfg. Co., Jersey City Chemical Div., 75 Droyers St., Jersey City 3, N. J.
Monsanto Chemical Co., Inorganic Chemical Div., Lindbergh & Olive Sts., Rd., St. Louis 24, Mo.
Monsanto Chemical Co., Plastics Div., 600 Monsanto Ave., Springfield 2, Mass.
Moore Corp., John B., Box 3, Nutley 10, N. J.
Nash & Thompson, Ltd., Oakcroft Rd., Chessington, Surrey, England
National Aluminate Corp., 6216 W. 66th Place, Chicago 38, Ill.
National Lead Co., 111 Broadway, New York 6, N. Y.
Nopco Chemical Co., 60 Park Place, Newark 1, N. J.
NORTON CO., 1 New Bond St., Worcester 6, Mass. ADV. PG. 77
Pennsalt Chemicals Corp., 3 Penn Center, Philadelphia 2, Pa.
Pfizer & Co., Inc., Charles, Chemical Sales Div., 630 Flushing Ave., Brooklyn 6, N. Y.
Philadelphia Quartz Co., 1146X Public Ledger Bldg., Philadelphia 6, Pa.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
PILOT CHEMICALS, INC., 96 Pleasant St., Watertown 72, Mass. ADV. PG. 243
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Reichhold Chemicals, Inc., 525 N. Broadway, White Plains, N. Y.
Reilly Tar & Chemical Corp., 1615 Merchants Bank Bldg., Indianapolis 4, Ind.
Rohm & Haas Co., Washington Square, Philadelphia 5, Pa.
Schwarz Laboratories, Inc., 230 Washington St., Mt. Vernon, N. Y.
Shell Chemical Corp., Chemical Sales Div., 380 Madison Ave., New York, N. Y.
Silicones Div., Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
SINGLE CRYSTAL CORP. OF AMERICA, RD1, Saxonburg Blvd., Saxonburg, Pa. ADV. PG. 246
Sylvania Electric Products Inc., Chemical & Metallurgical Div., Towanda, Pa.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Titanium Zirconium Co., Inc., Flemington, N. J.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
U B S Chemical Corp., 491 Main St., Cambridge 42, Mass.
Union Carbide Chemicals Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
United States Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Volk Radiochemical Co., 5412 N. Clark St., Chicago 40, Ill.
Wallace & Tierman, Inc., 25 Main St., Belleville 9, N. J.
Will Corporation, Wilco Place, Box 1050, Rochester 3, N. Y.

CHEMICALS—Labeled

See ISOTOPE—LABELED COMPOUNDS

CHOKES—Filter

See COILS

CHROMATOGRAPHIC APPARATUS

Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
Baird & Tatlock (London) Ltd., Freshwater Rd., Chadwell Heath, Essex, England
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill.
Beckman/Scientific & Process Instruments Div., Beckman Instruments, Inc., 2500 Fullerton Rd., Fullerton, Calif.
Bio-Rad Laboratories, 1257 S. 32nd St., Richmond, Calif.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Davis Emergency Equipment Co., Davis Instrument Div., 47 Halleck St., Newark 4, N. J.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston, Ill. ADV. PG. 229
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
Gow-Mac Instrument Co., 100 Kings Rd., Madison, N. J.
Industrial Instruments, Inc., 89 Commerce Rd., Cedar Grove, N. J.
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Kontes Glass Co., Dept. P-159, Vineland, N. J.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Menlo Research Laboratory, P. O. Box 522, Menlo Park, Calif.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Perkin-Elmer Corp., Main Ave., Norwalk, Conn.
Phoenix Precision Instrument Co., 3803-05 N. Fifth St., Philadelphia, Pa.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Research Specialties Co., 200 S. Garrard Blvd., Richmond, Calif.
Roy Co., Milton, 1300 E. Mermaid Lane, Philadelphia 18, Pa.
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Thomas Co., Arthur A., Vine St. at Third, Box 779, Philadelphia 5, Pa.
Towers & Co. Ltd., J. W., Victoria House, Widnes, Lancs., England
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Victory Engineering Corp., 77 Springfield Rd., Union, N. J.
Will Corporation, Wilco Place, Box 1050, Rochester 3, N. Y.

CIRCUITS—Packaged

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Burndept Ltd., West St., Erith, Kent, U. K.
Centralab Div., Globe-Union Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.
COLE ELECTRIC CO., 8439 Stellar Drive, Culver City, Calif. ADV. PG. 193
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
DI-AN Controls, Inc., 40 Leon St., Boston 15, Mass.
Elcor, Inc., Box 354, McLean, Va.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Electromation Co., 1646 18th St., Santa Monica, Calif.
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Emerson & Cuming, Inc., 869 Washington St., Canton, Mass.
Engineered Electronics Co., 506 E. First St., Santa Ana, Calif.
Erie Resistor Corp., 639 W. 12th St., Erie, Pa.
Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N. Y.
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Laboratory for Electronics, Inc., 75 Pitts St., Boston 14, Mass.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Mallory & Co., Inc., P. R., 58 S. Gray St., Indianapolis 6, Ind.
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
Ransom Research, P. O. Box 269, San Pedro, Calif.
Reeves Instrument Corp., Roosevelt Field, Garden City, N. Y.
Sanders Associates, Inc., 95 Canal St., Nashua, N. H.
Servomechanisms, Inc., 12500 Aviation Blvd., Hawthorne, Calif.
Sprague Electric Co., North Adams, Mass.
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
Techniques, Inc., P. O. Box 85, Hackensack, N. J.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Transonic, Inc., 808 16th St., Box 59, Bakersfield, Calif.
Vector Electronic Co., 1100 Flower St., Glendale 1, Calif.
VICTOREEN INSTRUMENT CO., 5806-11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Walkirt Co., The, 141 W. Hazel St., Inglewood 3, Calif.
Wheeler Electronic Corp., Sub. of Sperry Rand Corp., 150 E. Aurora St., Waterbury 20, Conn.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

CIRCUITS—Printed, Stamped or Etched

AEG—ABT KEA, Hochhaus' Sued, Frankfurt/Main, Germany
Admiral Corp., 3800 W. Cortland St., Chicago 47, Ill.
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Beck's, Inc., 298-300 E. Fifth St., St. Paul 1, Minn.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2 Mich. ADV. PG. 144, 145
Burndept Ltd., West St., Erith, Kent, U. K.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
E.M.I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
Electromation Co., 1646 18th St., Santa Monica, Calif.
Electronic Associates, Inc., Long Branch, N. J.
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Engineered Electronics Co., 506 E. First St., Santa Ana, Calif.
General Electric Co., Laminated Products Dept., Coshocton, Ohio
Gladding, McBean & Co., 2901 Los Feliz Blvd., Los Angeles 39, Calif.
Gulton Industries, Durham Ave., Metuchen, N. J.
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Kellogg Switchboard & Supply Co., IT&T Div., 6650 S. Cicero Ave., Chicago 38, Ill.
Laboratory for Electronics, Inc., 75 Pitts St., Boston 14, Mass.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Magnavox Co., The, Fort Wayne, Ind.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Methode Mfg. Corp., 7447 W. Wilson Ave., Chicago 31, Ill.
NATIONAL BERYLLIA CORP., 4501 Dell Ave., North Bergen, N. J. ADV. PG. 254
PHILIPS GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Rank Cintel Ltd., Worsley Bridge Rd., London, S.E. 26, England
Sanders Associates, Inc., 95 Canal St., Nashua, N. H.
Sprague Electric Co., North Adams, Mass.
Sylvania Electronic Systems, Div. of Sylvania Electric Products Inc., 100 First Ave., Waltham 54, Mass.
Techniques, Inc., P. O. Box 85, Hackensack, N. J.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Trio Machine Works, Inc., 3045 N. 3rd St., Philadelphia 33, Pa.
Zenith Optical Lab., 1940 Great Neck Rd., Copiague, N. Y.
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.

CLEANERS—Ultrasonic

See ULTRASONIC EQUIPMENT

CLOTHING—Protective

Air Reduction Sales Co., Div. of Air Reduction Co., Inc., 150 E. 42nd St., New York 17, N. Y.
AMERICAN LAUNDRY MACHINERY CO., Norwood 12, Ohio ADV. PG. 224
American Optical Co., 28 Mechanic St., Southbridge, Mass.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd. Los Angeles 34, Calif. ADV. PG. 237
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
CHARLESTON RUBBER CO., 7 Stark Industrial Park, Charleston, S. C. ADV. PG. 75
General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50, Pa.
Industrial Over-All Laundry, 1604 Thomaston Ave., Waterbury 14, Conn.
INTERSTATE INDUSTRIAL UNIFORM RENTAL SERVICE, DECONTAMINATION LAUNDRY DIV., 295 Parker St., Indian Orchard, Mass. ADV. PG. 211
Johns-Manville, 22 E. 40th St., New York 16, N. Y.
New Jersey Safety Equipment Co., Park Ave. at Garden State Pkwy., East Orange, N. J.
NUCLEAR LAUNDRY SERVICE, INC., P. O. Box 4145, Waterbury 14, Conn. ADV. PG. 251
Surety Rubber Co., N. High St., Carrollton, Ohio
Standard Safety Equipment, 431 N. Quentin Rd., Palatine, Ill.
Workley, Inc., 253 W. 28th St., New York 1, N. Y.
Yonkers Industrial Plastic Products Co., 137 Sawmill River Rd., Yonkers, N. Y.

CLUTCHES & BRAKES—Magnetic

Autotronics, Inc., Rt. 1, Box 812, Florissant, Mo.
Belock Instrument Corp., 111-01 14th Ave., College Point, N. Y.
Bowmar Instrument Corp., 8000 Bluffton Rd., Fort Wayne, Ind.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W.C. 2
Hellpot Div. of Beckman Instruments, Fullerton, Calif.
LYNDON AIRCRAFT, 140 Clifford St., Newark, N. J. ADV. PG. 250
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
Precision Methods & Machine, Inc., Cumberland Drive, Waterbury, Conn.
Reeves Instrument Corp., Roosevelt Field, Garden City, N. Y.
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Warner Electric Brake & Clutch Co., Beloit, Wis.

COATINGS—Protective, Permanent

Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Amercoat Corp., 4809 Firestone Blvd., South Gate, Calif.
American Durafilm Co., Inc., 2300 Washington St., Newton Lower Falls, Mass.
Arco Co., 7301 Bessemer Ave., Cleveland 27, Ohio
Armstrong Cork Co., Lancaster, Pa.
Bettinger Corp., Milford, Mass.
Biggs Co., Carl H., 2255 Barry Ave., West Los Angeles 64, Calif.
Bio Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Carboline Co., 32 Hanley Industrial Court, St. Louis 17, Mo.
CHARLESTON RUBBER CO., 7 Stark Industrial Park, Charleston, S. C. ADV. PG. 75
Chemical Development Corp., Endicott St., Danvers, Mass.
Chromalloy Corp., 450 Tarrytown Rd., White Plains, N. Y.
Clay-Adams Co., 141 E. 25th St., New York 10, N. Y.
Connecticut Hard Rubber Co., New Haven 9, Conn.
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
Corrosite Corp., 64 S. 6th St., Brooklyn 11, N. Y.
Dow Chemical Co., Midland, Mich.
Du Pont De Nemours & Co., Inc., E. I., Wilmington 98, Del.
Eagle-Picher Co., Cincinnati, Ohio
Earl Paint Corp., 5520 S. Shore Drive, Chicago 37, Ill.
Electro Chemical Engineering & Mfg. Co., 750 N. Broad St., Emmaus, Pa.
Electro Technical Products Div. of Sun Chemical Corp., 113 E. Centre St., Nutley, N. J.
Emerson & Cuming, Inc., 869 Washington St., Canton, Mass.
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
EVERSHIELD PRODUCTS, INC., 53 W. Jackson Blvd., Chicago 4, Ill. ADV. PG. 176
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Floquil Products, Inc., Cobleskill, N. Y.
General American Transportation Corp., 135 S. La Salle, Chicago, Ill.
Houghton Laboratories, Inc., Houghton Ave., Olean, N. Y.
Identification Service Corp., 144 W. 46th St., New York, N. Y.
Gulton Industries, Durham Ave., Metuchen, N. J.
Inertol Co., Inc., 484-7 Frelinghuysen Ave., Newark 12, N. J.
Kendall Co., The, Polyken Sales Div., 309 W. Jackson Blvd., Chicago 6, Ill.
Knight Co., Maurice A., 171 Kelly Ave., Akron, Ohio
LINDE CO., DIV. OF UNION CARBIDE CORP., 420 Lexington Ave., New York 17, N. Y. ADV. PG. 180
Lithcote Corp., 5000 Lake St., Melrose Park, Ill.
Lukens Steel Co., 266 Lukens Bldg., Coatesville, Pa.
Master Builders Co., 7016 Euclid Ave., Cleveland, Ohio
Metal & Thermit Corp., Rahway, N. J.
Micro-Circuits Co., New Buffalo, Mich.
Minnesota Mining & Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.
Moore & Co., Samuel, Mantua, Ohio
Morningstar Paisley, Inc., 630 W. 51st St., New York 19, N. Y.
National Lead Co., 111 Broadway, New York 6, N. Y.
NORTON CO., 1 New Bond St., Worcester 6, Mass. ADV. PG. 77
Oakite Products, Inc., 19 Rector St., New York 6, N. Y.
Pennsalt Chemicals Corp., 3 Penn Center, Philadelphia 2, Pa.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
Philadelphia Quartz Co., 1146X Public Ledger Bldg., Philadelphia 6, Pa.
Pittsburgh Coke & Chemical, Protective Coatings Div., Grant Bldg., Pittsburgh 19, Pa.
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
Polymer Corp., The, Reading, Pa.
Precision Coating Co., Inc., 37 Franklin St., Needham Heights 94, Mass.
Preco Chemical Corp., 415 Lexington Ave., New York 17, N. Y.
Reilly Tar & Chemical Corp., 1615 Merchants Bank Bldg., 11 S. Meridan St., Indianapolis 4, Ind.
Sauereisen Cements Co., Sauereisen Bldg., Pittsburgh 15, Pa.
Shell Chemical Corp., Chemical Sales Div., 380 Madison Ave., New York, N. Y.
Silicones Division, Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
SOLAR AIRCRAFT CO., 2200 Pacific Highway, San Diego 12, Calif. ADV. PG. 143
Sonneborn Sons, Inc., L., 404 Fourth Ave., New York 16, N. Y.
Sparta Mfg. Co., Div. of U. S. Ceramic Tile Co., Dover, Ohio
Squires Co., C. E., 18805 Syracuse Ave., Cleveland 10, Ohio
Stonhard Co., Inc., 1306 Spring Garden St., Philadelphia 23, Pa.
Thermal Refractories Corp., 4501 Dell Ave., North Bergen, N. J.
Thermo Materials Inc., 4040 Campbell Ave., Menlo Park, Ill.
Tickle Engineering Works, Inc., Arthur, 30 Delevan St., Brooklyn 31, N. Y.
U. S. Stoneware Co., Akron 9, Ohio
Varnitco Co., 416 N Varney St., Burbank, Calif.
Vorac Co., 147 Meadow Rd., Rutherford, N. J.
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.
Zenith Optical Lab., 1940 Great Neck Rd., Copiague, N. Y.

COATINGS—Protective, Removable

Amercoat Corp., 4809 Firestone Blvd., South Gate, Calif.
Arco Co., 7301 Bessemer Ave., Cleveland 27, Ohio
Biggs Co., Carl H., 2255 Barry Ave., West Los Angeles 64, Calif.
Bio Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Carboline Co., 32 Hanley Industrial Court, St. Louis 17, Mo.
Chemical Development Corp., Endicott St., Danvers, Mass.
Cooper Co., D. C., 1467 S. Michigan Ave., Chicago, Ill.
Corrosite Corp., 64 S. 6th St., Brooklyn 11, N. Y.
Du Pont de Nemours & Co., Inc., E. I., Wilmington 98, Del.

Emerson & Cuming, Inc., 869 Washington St., Canton, Mass.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Metal & Thermit Corp., Rahway, N. J.
Morningstar Paisley, Inc., 630 W. 51st St., New York 19, N. Y.
Oakite Products, Inc., 19 Rector St., New York 6, N. Y.
Pennsalt Chemicals Corp., 3 Penn Center, Philadelphia 2, Pa.
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
Sauereisen Cements Co., Sauereisen Bldg., Pittsburgh 15, Pa.
Silicones Division, Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
Sonneborn Sons, Inc., L. 404 Fourth Ave., New York 16, N. Y.
Sparta Mfg. Co., Div. of U. S. Ceramic Tile Co., Dover, Ohio
Squires Co., C. E., 18805 Syracuse Ave., Cleveland 10, Ohio
U B S Chemical Corp., 491 Main St., Cambridge 42, Mass.
Vorac Co., 147 Meadow Rd., Rutherford, N. J.
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.

COILS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.
Amp, Incorporated, Chemicals & Dielectrics Div., 155 Park St., Elizabethtown, Pa.
Belock Instrument Corp., 111-01 14th Ave., College Point, N. Y.
Boonton Radio Corp., Boonton, N. J.
Bush Transformer Corp., 707 North St., Endicott, N. Y.
Cambridge Thermionic Corp., 445 Concord Ave., Cambridge 38, Mass.
Central Transformer Co., 910 W. Jackson Blvd., Chicago 7, Ill.
Cinema Engineering Co., Div. of Aerovox Corp., 1100 Chestnut St., Burbank, Calif.
Communication Accessories Co., Lee's Summit, Mo.
D & R Ltd., 402 E. Gutierrez St., Santa Barbara, Calif.
Daven Co., Route 10, Livingston, N. J.
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
Grand Transformers, Inc., Marian & Beech Tree Sts., Grand Haven, Mich.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Jeffers Electronics Div., Speer Carbon Co., DuBois, Pa.
Johnson Co., E. F., Waseca, Minn.
Magnavox Co., The, Fort Wayne, Ind.
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.
North Hills Electric Co., Inc., 402 Sagamore Ave., Mineola, N. Y.
PCA Electronics, Inc., 16799 Schoenborn St., Sepulveda, Calif.
Perkin Engineering Corp., 345 Kansas St., El Segundo, Calif.
Potter Aeronautical Corp., Route 22, Union, N. J.
Raypar, Inc., 7800 W. Addison St., Chicago 34, Ill.
Redman Electronics Corp., P. O. Box 72, Thompsonville, Conn.
Sterling Transformer Corp., 297 N. Seventh St., Brooklyn 11, N. Y.
STONITE COIL CO., Route 25, Yardville, N. J. ADV. PG. 252
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Transformers, Inc., 200 Stage Rd., Vestal, N. Y.
Transonic, Inc., 808 16th St., Box 59, Bakersfield, Calif.
Tresco, Inc., 3824 Terrace St., Philadelphia 28, Pa.
United Transformer Corp., 150 Varick St., New York 13, N. Y.
Vari-L Co., Inc., P. O. Box 1433, Stamford, Conn.
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Waters Manufacturing, Inc., Boston Post Rd., Wayland, Mass.
Wheeler Electronic Corp., Sub. of Sperry Rand Corp., 150 E. Aurora St., Waterbury 20, Conn.

COLORIMETERS

Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
Aloe Scientific Div., of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
Bausch & Lomb Optical Co., 630 St. Paul St., Rochester 2, N. Y.
Beckman Scientific & Process Instruments Div., Beckman Instruments, Inc., 2500 Fullerton Rd., Fullerton, Calif.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Cutler-Hammer, Inc., 412 N. 12th St., Milwaukee 1, Wis.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Ercona Corp., Scientific Instrument Div., 16 W. 46th St., New York 36, N. Y.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Instrument Development Lab., Inc., 67 Mechanic St., Attleboro, Mass.
Kahl Scientific Instrument Corp., P. O. Box 1166, El Cajon, Calif.
KOLLMORGEN OPTICAL CORP., 347 King St., Northampton, Mass. ADV. PG. 167
Macbeth Instrument Corp., Little Britain Rd., Newburgh, N. Y.
Manufacturers Engineering & Equipment Corp., York & Mill Rds., Hatboro, Pa.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Phoenix Precision Instrument Co., 3803-05 N. Fifth St., Philadelphia, Pa.
Photovolt Corp., 95 Madison Ave., New York 16, N. Y.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.

COLUMNS—Absorption

ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
Bio-Rad Laboratories, 1257 S. 32nd St., Richmond, Calif.
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa.
Chicago Steel Tank Co., 6400 W. 66th St., Chicago, Ill.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
Doyle & Roth Mfg. Co., Inc., 136-50 24th St., Brooklyn 32, N. Y.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
Gallenkamp & Co., Ltd., A., Sun St., London E. C. 2, England
General Alloys Co., 405 W. First St., Boston 27, Mass.
General American Transportation Corp., 135 S. La Salle, Chicago, Ill.
GRAVER TANK & MFG. CO., INC., 4809 Tod Ave., East Chicago, Ind. ADV. PG. 195
Knight Co., Maurice A., 171 Kelly Ave., Akron, Ohio
Kontes Glass Co., Dept. P-159, Vineland, N. J.
Koven Fabricators, Inc., 90 E. Dickerson St., Dover, N. J.
Leader Iron Works, Inc., 2150 N. Jasper, Decatur, Ill.
NATIONAL CARBON CO., DIV. OF UNION CARBIDE CORP., 30 E. 42nd St., New York 17, N. Y. ADV. PG. Fourth Cover
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Packed Column Corp., 30 Church St., New York 7, N. Y.
Perkin-Elmer Corp., Main Ave., Norwalk, Conn.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
Pittsburgh Des Moines Steel Co., Pittsburgh 25, Pa.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
Steel & Alloy Tank Co., 1 Bessemer St., Newark 5, N. J.
Struthers-Wells Corp., Warren, Pa.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England
Willamette Iron & Steel Co., 2800 N. W. Front Ave., Portland 10, Ore.

COLUMNS—Distilling, Fractionating, etc.

Adler's Metal Works, 1310 Germantown Ave., Philadelphia 22, Pa.
ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
Babcock & Wilcox Ltd., Babcock House, 209 Euston Rd., London N.W. 1, England
Blaw-Knox Co., 300 Sixth Ave., N.B., Pittsburgh 22, Pa.
Cambridge Corp., 2 Industrial Park, Lowell, Mass.
Chicago Steel Tank Co., 6400 W. 66th St., Chicago, Ill.
Condenser Service & Engineering Co., Inc., 150 Observer Highway, Hoboken, N. J.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
Doyle & Roth Mfg. Co., Inc., 136-50 24th St., Brooklyn 32, N. Y.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Fisher Scientic Co., 709 Forbes St., Pittsburgh 19, Pa.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
General Alloys Co., 405 W. First St., Boston 27, Mass.
General American Transportation Corp., 135 S. La Salle, Chicago, Ill.
GRAVER TANK & MFG. CO., INC., 4809 Tod Ave., East Chicago, Ind. ADV. PG. 195
Knight Co., Maurice A., 171 Kelly Ave., Akron, Ohio
Kontes Glass Co., Dept. P-159, Vineland, N. J.
Koven Fabricators, Inc., 90 E. Dickerson St., Dover, N. J.
Leader Iron Works, Inc., 2150 N. Jasper, Decatur, Ill.
NATIONAL CARBON CO., DIV. OF UNION CARBIDE CORP., 30 E. 42nd St., New York 17, N. Y. ADV. PG. Fourth Cover
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Packed Column Corp., 30 Church St., New York 7, N. Y.
Perkin-Elmer Corp., Main Ave., Norwalk, Conn.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
Steel & Alloy Tank Co., 1 Bessemer St., Newark 5, N. J.
Struthers-Wells Corp., Warren, Pa.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England
Willamette Iron & Steel Co., 2800 N. W. Front Ave., Portland 10, Ore.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

COLUMNS—Solvent Extraction

ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa.
Chicago Steel Tank Co., 6400 W. 66th St., Chicago, Ill.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19 Pa.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
General American Transportation Corp., 135 S. La Salle, Chicago, Ill.
GRAVER TANK & MFG. CO., INC., 4809 Tod Ave., East Chicago, Ind. ADV. PG. 195
Knight Co., Maurice A., 171 Kelly Ave., Akron, Ohio
Koven Fabricators, Inc., 90 E. Dickerson St., Dover, N. J.
Leader Iron Works, Inc., 2150 N. Jasper, Decatur, Ill.
Pfaudler Co. The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
Steel & Alloy Tank Co., 1 Bessemer St., Newark 5, N. J.
Struthers-Wells Corp., Warren, Pa.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs. England

COMPOUNDS—Labeled

See ISOTOPE LABELED COMPOUNDS

COMPRESSORS—Air & Gas

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronautronic Systems, Inc., 1234 Air Way, Glendale, Calif.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
Beach-Russ Co., 50 Church St., New York 7, N. Y.

Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Clark Bros. Co., Div. of Dresser Operations, Inc., Lincoln Ave. & Fifth St., Olean, N. Y.
Dayton Electric Mfg. Co., 126 S. Oakley Blvd., Chicago 12, Ill.
DeVilbiss Co., 300 Philips Ave., Toledo, Ohio
Dunham-Bush, Inc., 179 South St., West Hartford 10, Conn.
Gast Mfg. Corp., P. O. Box 117-N, Benton Harbor, Mich.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Ingersoll-Rand Co., Phillipsburg, N. J.
Joy Mfg. Co., Oliver Bldg., Pittsburgh 22, Pa.
Kahlenberg Bros. Co., 12th & Monroe Sts., Two Rivers, Wis.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Keystone Compressor Co., 8417 Hagerman St., Philadelphia 36, Pa.
Lapp Insulator Co., Inc., 40 Gilbert St., LeRoy, N. Y.
Nash Engineering Co., 450 Wilson Rd., South Norwalk, Conn.
Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 1, Wis.
Quincy Compressor Co., Quincy, Ill.
Roots-Connersville Blower Div., Dresser Industries, Inc., 9000 W. Mount St., Connersville, Ind.
Wagner Electric Co., 6400 Plymouth Ave., St. Louis 14, Mo.
Worthington Corp., Harrison, N. J.

COMPUTER ACCESSORIES

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Airpax Products Co., Seminole Div., Fort Lauderdale, Fla.
Beck's, Inc., 298-300 E. Fifth St., St. Paul 1, Minn.
Belock Instrument Corp., 111-01 14th Ave., College Point, N. Y.
BENDIX AVIATION CORP., Computer Div., Fisher Bldg. Detroit 2, Mich. **ADV. PG. 144, 145**
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Colorado Research Corp., Broomfield Heights, Colo.
Computer Control Co., Inc., 92 Broad St., Babson Park, Wellesley 57, Mass.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. **ADV. PG. 220**
Daven Co., Route 10, Livingston, N. J.
DI-AN Controls, Inc., 40 Leon St., Boston 15, Mass.
Digitran Co., The, 45 W. Union St., Pasadena, Calif.
Donner Scientific Corp., 888 Galindo St., Concord, Calif.
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England **ADV. PG. 236**
Electronic Associates, Inc., Long Branch, N. J.
Electronic Engineering Co. of California, 1601 E. Chestnut St., Santa Ana, Calif.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London S. E. 13, England
El-Tronics, Inc., Suburban Station Bldg., Philadelphia, Pa.
Engineered Electronics Co., 506 E. First St., Santa Ana, Calif.
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Erie Resistor Corp., 639 W. 12th St., Erie, Pa.
Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N. Y.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. **ADV. PG. 94, 95**
General Electric Co., Computer Div., 1103 N. Central Ave., Phoenix, Ariz.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Hydel, Inc., 99 First St., Cambridge 41, Mass.
Kearfott Co., Inc., Engineering & Sales Div., 1378 Main Ave., Clifton, N. J.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. **ADV. PG. 246**
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Mid-Century Instrumatic Corp., 611 Broadway, New York 12, N. Y.
Moseley Co., F. L. 409 N. Fair Oaks Ave., Pasadena, Calif.
Mullard Equipment Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
Navigation Computer Corp., 1621 Snyder Ave., Philadelphia 45, Pa.
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
Ransom Research, P. O. Box 269, San Pedro, Calif.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Sylvania Electronic Systems Div. of Sylvania Electric Products Inc., 100 First Ave., Waltham 54, Mass.
Techniques, Inc., P. O. Box 85, Hackensack, N. J.
Technitrol Engineering Corp., Emerald St. & Allegheny Ave., Philadelphia 34, Pa.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Telectro Industries Corp., 35-16 37th St., Long Island City 1, N. Y.
Trio Machine Works, Inc., 3045 N. 3rd St., Philadelphia 33, Pa.
Vector Electronic Co., 1150 Flower St., Glendale 1, Calif.
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

COMPUTER SERVICES

See SERVICES

COMPUTERS—Analog

See also SIMULATORS-Reactor.

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Airpax Products Co., Seminole Div., Fort Lauderdale, Fla.
Allegany Instrument Co., Inc., Cumberland, Md.
Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
Atomic Laboratories, Berkeley, Calif.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Belock Instrument Corp., 111-01 14th Ave., College Point, N. Y.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. **ADV. PG. 144, 145**
Bowmar Instrument Corp., 8000 Bluffton Rd., Fort Wayne, Ind.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
California Research Corp., 200 Bush St., San Francisco 4, Calif.
Canadian Applied Research, Ltd., 1500 O'Connor Drive, Toronto 16, Ontario, Canada
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Chicago Aerial Industries, Inc., 1980 Hawthorne Ave., Melrose Park, Ill.
Colorado Research Corp., Broomfield Heights, Colo.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. **ADV. PG. 220**
Deltime, Inc., 608 Fayette Ave., Mamaroneck, N. Y.
Detroit Controls Div. of American-Standard, 100 Morse St., Norwood, Mass.
Diam Laboratories, Inc., 611 Broadway, New York 12, N. Y.
Donner Scientific Corp., 888 Galindo St., Concord, Calif.
E.M.I. ELECTRONICS LTD., Hayes, Middlesex, England **ADV. PG. 236**
Electronic Associates, Inc., Long Branch, N. J.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
General Electric Co., Computer Div., 1103 N. Central Ave., Phoenix, Ariz.
Giannini & Co., Inc., G. M., 918 E. Green St., Pasadena, Calif.
Heath Co., Benton Harbor, Mich.
Helland Div. of Minneapolis-Honeywell Regulator Co., 5200 E. Evans Ave., Denver 22, Colo.
Hydel, Inc., 99 First St., Cambridge 41, Mass.
Industrial Nucleonics Corp., 1205 Chesapeake Ave., Columbus 12, Ohio
Kearfott Co., Inc., Engineering & Sales Div., 1378 Main Ave., Clifton, N. J.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. **ADV. PG. 246**
Link Aviation, Inc., Binghamton, N. Y.
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Mid-Century Instrumatic Corp., 611 Broadway, New York 12, N. Y.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Nash & Thompson Ltd., Oakcroft Rd., Chessington, Surrey, England
Oster Mfg. Co., John, Avionic Div., 1 Main St., Racine, Wis.
Patterson Moos Div., Universal Winding Co., 90-28 Van Wyck Expressway, Jamaica 18, N. Y.
Peerless Instrument Co., Inc., 90-15 Corona Ave., Elmhurst 73, N. Y.
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
Reeves Instrument Corp., Roosevelt Field, Garden City, N. Y.
Servomechanisms, Inc., 12500 Aviation Blvd., Hawthorne, Calif.
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
Sperry Gyroscope Div. of Sperry-Rand Corp., Great Neck, N. Y.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Tammen & Denison, Inc., 4751 N. Olcott NB, Chicago 31, Ill.
Telectro Industries Corp., 35-16 37th St., Long Island City 1, N. Y.
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas
Thompson Products, Inc., Staff Research & Development New Devices Dept., 7209 Platt Ave., Cleveland 4, Ohio
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

COMPUTERS—Digital

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
BJ ELECTRONICS, BORG-WARNER CORP., 3388 Newport Ave., Santa Ana, Calif. **ADV. PG. 81**
Belock Instrument Corp., 111-01 14th Ave., College Point, N. Y.
BENDIX AVIATION CORP., COMPUTER DIV., Fisher Bldg., Detroit 2, Mich. **ADV. PG. 144, 145**
Bowmar Instrument Corp., 8000 Bluffton Rd., Fort Wayne, Ind.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Computer Control Co., Inc., 92 Broad St., Babson Park, Wellesley 57, Mass.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Cubic Corp., 5575 Kearny Villa Rd., San Diego 11, Calif.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. **ADV. PG. 220**
Datamatic Corp., 151 Needham St., Newton Highlands 61, Mass.
DI-AN Controls, Inc., 40 Leon St., Boston 15, Mass.
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England **ADV. PG. 236**
ElectroData Div. of Burroughs Corp., 460 Sierra Madre Villa, Pasadena, Calif.
Electronic Engineering Co. of California, 1601 E. Chestnut St., Santa Ana, Calif.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
El-Tronics, Inc., Suburban Station Bldg., Philadelphia, Pa.
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N. Y.
FORD INSTRUMENT CO., DIV. OF THE SPERRY-RAND CORP., 31-10 Thomson Ave., Long Island City 1, N. Y. **ADV. PG. 183**
General Electric Co., Computer Div., 1103 N. Central Ave., Phoenix, Ariz.
Giannini & Co., Inc., G. M. 918 E. Green St., Pasadena, Calif.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Hydel, Inc., 99 First St., Cambridge 41, Mass.
Industrial Nucleonics Corp., 1205 Chesapeake Ave., Columbus 12, Ohio
Kearfott Co., Inc., Engineering & Sales Div., 1378 Main Ave., Clifton, N. J.
Laboratory for Electronics, Inc., 75 Pitts St., Boston 14, Mass.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. **ADV. PG. 246**
Link Aviation, Inc., Binghamton, N. Y.
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Macbeth Instrument Corp., Little Britain Rd., Newburgh, N. Y.
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
National Cash Register Co., The, Main & K Sts., Dayton, Ohio
Navigation Computer Corp., 1621 Snyder Ave., Philadelphia 45, Pa.
Oster Mfg. Co., John, Avionic Div., 1 Main St., Racine, Wis.
Patterson Moos Div., Universal Winding Co., 90-28 Van Wyck Expressway, Jamaica 18, N. Y.
Ransom Research, P. O. Box 269, San Pedro, Calif.
Remington Rand Div. of Sperry Rand Corp., 315 Fourth Ave., New York 10, N. Y.
Royal McBee Corp., Port Chester, N. Y.
Servomechanisms, Inc., 12500 Aviation Blvd., Hawthorne, Calif.
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
Sperry Gyroscope Div. of Sperry Rand Corp., Great Neck, N. Y.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Sylvania Electronic Systems Div. of Sylvania Electric Products Inc., 100 First Ave., Waltham 54, Mass.
Technitrol Engineering Corp., Emerald St. & Allegheny Ave., Philadelphia 34, Pa.
Telectro Industries Corp., 35-16 37th St., Long Island City 1, N. Y.
Thompson Products, Inc., Staff Research & Development New Devices Dept., 7209 Platt Ave., Cleveland 4, Ohio
Thomson-Ramo-Woolridge Co., The, P. O. Box 45067, Airport Station, Los Angeles 45, Calif.
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Wallkill Co., The 141 W. Hazel St., Inglewood 3, Calif.
Wang Laboratories, Inc., 37 Hurley St., Cambridge 41, Mass.

Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

CONCRETE—High Density

Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
Intrusion-Prepakt, 568 Union Commerce Bldg., Cleveland 14, Ohio
Master Builders Co., 7016 Euclid Ave., Cleveland, Ohio
RAY-PROOF CORP., 843 Canal St., Stamford, Conn. ADV. PG. 272
Stonhard Co., Inc., 1306 Spring Garden St., Philadelphia 23, Pa.
Taylor Woodrow Construction Ltd., Ruislip Rd., Southall, Middlesex, Great Britain
Victor Chemical Works, 155 N. Wacker Drive, Chicago, Ill.

CONCRETE—Shielding

See SHIELDING

CONDENSERS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
American-Standard Ross Heat Exchanger Division, Box 2081, Buffalo 5, N. Y.
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Condenser Service & Engineering Co., Inc., 150 Observer Highway, Hoboken, N. J.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
Croll-Reynolds Engineering Co., 17 John St., New York 38, N. Y.
Doyle & Roth Mfg. Co., Inc., 136-50 24th St., Brooklyn 32, N. Y.
Dunham-Bush, Inc., 179 South St., West Hartford 10, Conn.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
Gallenkamp & Co., Ltd, A., Sun St., London E. C. 2, England
General Alloys Co., 405 W. First St., Boston 27, Mass.
General Electric Co., Ltd. of England, Magnet House, Kingsway, London, W. C. 2
GRISCOM-RUSSELL CO., SUB. OF GENERAL PRECISION EQUIPMENT CORP., Massillon, Ohio ADV. PG. 98
Kearney Industries, Delanium Graphite Div., 134 Elmora Ave., Elizabeth, N. J.
Kellogg Switchboard & Supply Co., IT&T Div., 6650 S. Cicero Ave., Chicago 38, Ill.
LANDSVERK ELECTROMETER CO., 641 Sonora Ave., Glendale 1, Calif. ADV. PG. 209
Leader Iron Works, Inc., 2150 N. Jasper, Decatur, Ill.
Modine Mfg. Co., 1603 De Koven Ave., Racine, Wis.
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
Struthers-Wells Corp., Warren, Pa.
Towers & Co., Ltd., J. W., Widnes, Lancs., England
Vogt Machine Co., Henry, 1000 W. Ormsby St., Louisville, Ky.
WHEELER MFG. CO., C. H., 19th & Lehigh Sts., Philadelphia 32, Pa. ADV. PG. 244
Worthington Corp., Harrison, N. J.
York Corp., York, Pa.
Young Radiator Co., 709 S. Marquette St., Racine, Wis.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

CONNECTORS—Electrical

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.
Alden Products Co., 118D N. Main St., Brockton, Mass.
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Amphenol Electronics Corp., 1830 S. 54th Ave., Chicago 50, Ill.
ANTON ELECTRONIC LABS, INC., 1226-38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
Automatic & Precision Mfg. Co., 252 Hawthorne Ave., Yonkers 5, N. Y.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Blonder-Tongue Laboratories, Inc., 9-25 Alling St., Newark 2, N. J.
Buggie & Co., H. H., Box 817, Toledo 1, Ohio
Burndept Ltd., West St., Erith, Kent, U. K.
Cambridge Thermionic Corp., 445 Concord Ave., Cambridge 38, Mass.
Cannon Electric Co., 3208 Humboldt St., Los Angeles 31, Calif.
COLE ELECTRIC CO., 8439 Stellar Drive, Culver City, Calif. ADV. PG. 193
Continental Connector Corp., Div. of DeJur Amsco Corp., Woodside 77, N. Y.
Deltime, Inc., 608 Fayette Ave., Mamaroneck, N. Y.
Dialight Corp., 60 Stewart Ave., Brooklyn 37, N. Y.
Dynatron Radio, Ltd., St. Peter's Rd., Furze Platt, Maidenhead, Berks, England
Garde Mfg. Co., 588 Eddy St., Providence 3, R. I.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Hallett Mfg. Co., 5710 Bowcroft St., Los Angeles 16, Calif.
Johnson Co., E. F., Waseca, Minn.
McCormick Selph Associates, Hollister Airport, Hollister, Calif.
Methode Mfg. Corp., 7447 W. Wilson Ave., Chicago 31, Ill.
Omaton Div. of Burndy Corp., Norwalk, Conn.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Pollak Corp., Joseph, 81 Freeport St., Boston 22, Mass.
Robinson Machine Works, Inc., 802 E. 8th St., New Albany, Ind.
SCINTILLA DIVISION, BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Superior Electric Co., The, 83 Laurel St., Bristol, Conn.
Techniques, Inc., P. O. Box 85, Hackensack, N. J.
Thermo Electric Co., Inc., Saddle Brook, N. J.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Titeflex, Inc., Hendee St., Springfield 4, Mass.
Towers & Co., Ltd., J. W., Widnes, Lancs., England
Trio Machine Works Inc., 3045 N. 3rd St., Philadelphia 33, Pa.
U. S. Gasket Co., Plastics Div. of The Garlock Packing Co. 600 N. 10th St., Camden 1, N. J.
Vector Electronic Co., 1100 Flower St., Glendale 1, Calif.
Winchester Electronics, Inc., Willard Rd., Norwalk, Conn.
Winslow Co., Inc., 705 Lehigh Ave., P. O. Box 394, Union, N. J.

CONNECTORS—Multi-Circuit, Electrical

Amphenol Electronics Corp., 1830 S. 54th Ave., Chicago 50, Ill.
ANTON ELECTRONIC LABS., INC., 1226-38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
Cannon Electric Co., 3208 Humboldt St., Los Angeles 31, Calif.
COLE ELECTRIC CO., 8439 Stellar Drive, Culver City, Calif. ADV. PG. 193
Continental Connector Corp., Div. of De Jur Amsco Corp., Woodside 77, N. Y.

CONSOLES, CABINETS & PANELS

Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.
Alden Products Co., 118D N. Main St., Brockton, Mass.
Allied Engineering & Production Corp., 242 Banding Ave., Alameda, Calif.
Amco Engineering Co., 7333 Ainslie St., Chicago 31, Ill.
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Bernard-Franklin Co., Inc., 4155 E. Hedley St., Philadelphia 37, Pa.
Bud Radio, Inc., 2118 E. 55th St., Cleveland 3, Ohio
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Eagle Signal Corp., 202 20th St., Moline, Ill.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
El-Tronics, Inc., Suburban Station Bldg., Philadelphia 39, Pa.
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Falstrom Company, 7 Falstrom Court, Passaic, N. J.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Harriss (Engineers), Granta Terrace, Stapleford, Cambridge, England
Hunter-Bristol Div., Thiokol Chemical Corp., Bristol, Pa.
Imhof Ltd., Alfred, 112-116 New Oxford St., London, W. C. 1, England
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Land Air, Inc., 2133 Adams Ave., San Leandro, Calif.
Leach Corp., 18435 Susana Rd., Compton, Calif.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
Leland Instruments, Ltd., 22-23 Millbank, London, Westminster, S. W. 1, England
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Boston Div., 40 Life St., Boston 35, Mass.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Par-Metal Products Corp., 32-62 49th St., Long Island City 3, N. Y.
Peerless Instrument Co., Inc., 90-15 Corona Ave., Elmhurst 73, N. Y.
Premier Metal Products Co., 337 Manida St., Bronx 59, N. Y.
Standard Pressed Steel Co., Box 1033, Jenkintown, Pa.
Teleweld Inc., 11535 Franklin St., Franklin Park, Ill.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 2355 Euclid Ave., Cleveland 17, Calif.
U. M. & F. Mfg. Co., 10929 Vanowen St., North Hollywood, Calif.
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
United Mfg. Co., Div. of W. L. Maxson Corp., 41 Haig St., Hamden 14, Conn.
Universal Industrial Equipment Co., 1625 Paterson Plank Rd., Secaucus, N. J.
Watson Mfg. Co., Inc., 4800 Taylor St., Jamestown, N. Y.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10

CONSULTING

See SERVICES

CONTAINERS—Metal

Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
Aluminum Co. of America, Alcoa Bldg., Pittsburgh 19, Pa.
Amco Engineering Co., 7333 Ainslie St., Chicago 31, Ill.
American Welding & Mfg. Co., Dietz Rd., Warren, Ohio
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Atomic Energy Waste Disposal Service, 5410 Bond St., Oakland 1, Calif.
Bernard-Franklin Co., Inc., 4155 E. Hedley St., Philadelphia 37, Pa.
Bud Radio, Inc., 2118 E. 55th St., Cleveland 3, Ohio
Chicago Bridge & Iron Co., 1305 W. 105th St., Chicago 43, Ill.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex Los Angeles 54, Calif.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St, Perth Amboy, N. J.
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Falstrom Company 7 Falstrom Court, Passaic, N. J.
HARVEY ALUMINUM, 19200 S. Western Ave., Torrance, Calif. ADV. PG. 59
Knapp Mills, Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
Land Air, Inc., 2133 Adams Ave., San Leandro, Calif.
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
National Lead Co., 111 Broadway, New York 6, N. Y.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
Protectoseal Co., 1920 S. Western Ave., Chicago, Ill.
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio
Specialty Engineering & Electronics Co., 79 Clifton Place, Brooklyn 38, N. Y.
Spincraft, Inc., 4158H W. State St., Milwaukee 8, Wis.
SOLAR AIRCRAFT CO., 2200 Pacific Highway, San Diego 12, Calif. ADV. PG. 143
Standard Railway Equipment Mfg. Co., 200 S. Michigan Ave., Chicago 4, Ill.
Teleweld Inc., 11535 Franklin St., Franklin Park, Ill.
Transonic, Inc., 808 16th St., Box 59, Bakersfield, Calif.
Trio Machine Works, Inc., 3045 N. 3rd St., Philadelphia 33, Pa.
U.M.&F. Mfg. Co., 10929 Vanowen St., North Hollywood, Calif.
Universal Industrial Equipment Co., 1625 Paterson Plank Rd., Secaucus, N. J.
Vector Electronic Co., 1100 Flower St., Glendale 1, Calif.
Warren Corp., 2901 Brighton Rd., Pittsburgh 12, Pa.
Witt Cornice Co., The, 4454 Steel Place, Cincinnati 9, Ohio
York Corp., York, Pa.

NUCLEAR AND ALLIED PRODUCTS — CONTROL-ROD DRIVE SYSTEMS

CONTAINERS—Plastic

Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Allied Resinous Products Inc., Box 620 Conneaut, Ohio
American Agile Corp., P. O. Box 168, Bedford, Ohio
CONNEAUT RUBBER & PLASTIC CO., DIV. OF U. S. STONEWARE CO., Commerce St., Conneaut, Ohio ADV. PG. 97
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Industrial Plastic Fabricators, Endicott St., Norwood, Mass.
Keller Products, Inc., 41 Union St., Manchester, N. H.
Knapp Mills, Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
National Vulcanized Fibre Co., Wilmington 99, Del.
New Jersey Safety Equipment Co., Park Ave. at Garden State Pkwy., East Orange, N. J.
Raytheon Mfg. Co., Nuclear Power Group, 28 Seyon St., Waltham 54, Mass.
Resistoflex Corp., Roseland, N. J.
Richardson Co., The, 2775 Lake St., Melrose Park, Ill.
Specialty Engineering & Electronics Co., 79 Clifton Place, Brooklyn 38, N. Y.
Standard Railway Equipment Mfg. Co., 200 S. Michigan Ave., Chicago 4, Ill.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
U. S. Stoneware Co., Akron 9, Ohio
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.
Yonkers Industrial Plastic Products Co., 137 Sawmill River Rd., Yonkers, N. Y.

CONTAINERS—Shielded

Ace Engineering & Machine Co., Inc., Tomlinson Rd., Huntingdon Valley, Pa.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
Allied Resinous Products, Inc., Box 620, Conneaut, Ohio
Alpha Metals, Inc., 56 Water St., Jersey City 4, N. J.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
Ames Metal Products Co., 4323 S. Western Ave., Chicago Ill.
Andel & Co., Inc., 5218 N. Kedzie Ave., Chicago 25, Ill.
Atomic Energy Waste Disposal Service, 5410 Bond St., Oakland 1, Calif.
BAR-RAY PRODUCTS, INC., 205 25th St., Brooklyn 32, N. Y. ADV. PG. 103
BUDD CO., NUCLEAR SYSTEMS DIV., 2950 Roberts Ave., Philadelphia 32, Pa. ADV. PG. 187
CONNEAUT RUBBER & PLASTIC CO., DIV. OF U. S. STONEWARE CO., Commerce St., Conneaut, Ohio ADV. PG. 97
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
Edlow Lead Co., 729 Bank St., Columbus 16, Ohio
Farrell-Birmingham Co., Inc., Ansonia, Conn.
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
General Lead Construction Corp., 1800 Harrison Ave., Kearny, N. J.
General Radiological Ltd., 15—18 Clipstone St., London, W. 1, England
HOKE, INC., Cressklll, N. J. ADV. PG. 222
Instruments, Inc., 122 N. Madison, P. O. Box 556, Tulsa, Okla.
Isotope Accessories Co., The, 5317 Westminster Ave., Philadelphia 31, Pa.
ISOTOPE DEVELOPMENTS, LTD., BEENHAM GRANGE, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
KELLEY & CO., O. G., 98 Taylor St., Dorchester, Mass. ADV. PG. 64, 65
Lennard Co., Inc., P.M., 1061 E. 8th St., Jacksonville 6, Fla.
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass. ADV. PG. 257
National Lead Co., 111 Broadway, New York 6 N. Y.
Nuclear Corp. of America Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
Nuclear Engineering Ltd., Woolwich Rd., London S.E. 7, England
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surrey) England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
PERFECTION MICA CO., MAGNETIC SHIELD DIV., 1322 N. Elston Ave., Chicago 22, Ill. ADV. PG. 234
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
RAY-PROOF CORP., 843 Canal St., Stamford, Conn. ADV. PG. 272
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24 Pa. ADV. PG. 92
SOLAR AIRCRAFT CO., 2200 Pacific Highway, San Diego 12, Calif. ADV. PG. 143
Standard Railway Equipment Mfg. Co., 200 S. Michigan Ave., Chicago 4, Ill.
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Warren Corp., The, 2901 Brighton Rd., Pittsburgh 12, Pa.
Western Radiation Lab., 1107 W. 24th St., Los Angeles 7, Calif.
Willamette Iron & Steel Co., 2800 N.W. Front Ave., Portland 10, Ore.

CONTAINMENT STRUCTURES

Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Lead Construction Co. 6836 S. Chicago Ave., Chicago, Ill.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Babcock & Wilcox Ltd., Babcock House, 209 Euston Rd., London N. W. 1, England
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
Chicago Bridge & Iron Co., 1305 W. 105th St., Chicago 43, Ill.
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
CONNEAUT RUBBER & PLASTIC CO., DIV. OF U. S. STONEWARE CO., Commerce St., Conneaut, Ohio ADV. PG. 97
Electric Boat Div., General Dynamics Corp., Groton, Conn.
GRAVER TANK & MFG. CO., INC., 4809 Tod Ave., East Chicago, Ind. ADV. PG. 195
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Pittsburgh Des Moines Steel Co., Pittsburgh 25, Pa.
Standard Railway Equipment Mfg. Co., 200 S. Michigan Ave., Chicago 4, Ill.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.

CONTROL & INSTRUMENTATION SYSTEMS—Reactor

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
American Welding & Mfg. Co., Dietz Rd., Warren, Ohio
Automotive & Aircraft Div., American Chain & Cable Co., Inc., 601 Stephenson Bldg., Detroit 2, Mich.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
CANADAIR LTD., P. O. Box 6987, Montreal, Que., Canada ADV. PG. 185
Collins Corp., G. L., 2820 Hullett St., Long Beach, Calif.
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Consolidated Control Corp., Durant Ave., Bethel, Conn.
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
Cook Electric Co., 2700 Southport Ave., Chicago 14 Ill.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Devco Engineering Inc., Control Systems, Div., Pier Lane West, Caldwell Township Caldwell, N. J.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
English Electric Export Trading Co., Ltd., 23/25 New York 4, N. Y.
Ericssons Telephones, Ltd., Instrument Div., High Church St., New Basford, Nottingham, England
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
FORD INSTRUMENT CO., DIV. OF SPERRY-RAND CORP., 31—10 Thomson Ave., Long Island City 1, N. Y. ADV. PG. 183
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Radiological Ltd., 15—18 Clipstone St., London, W. 1, England
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
Leach Corp., 18435 Susana Rd., Compton, Calif.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Ave., Philadelphia 44, Pa.
Mullard Equipment Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
New London Instrument Co., P. O. Box 189, New London, Conn.
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
Servomechanisms, Inc., 12500 Aviation Blvd., Hawthrone, Calif.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Thompson-Ramo-Wooldridge Co., The, P. O. Box 45067, Airport Station, Los Angeles 45, Calif.
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
Vard, Inc., 2981 E. Colorado St., Pasadena 8, Calif.
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
VICTOREEN INSTRUMENT CO., 5806-11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10

CONTROL-ROD DRIVE SYSTEMS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Airborne Accessories Corp., 1414 Chestnut Ave., Hillside 5, N. J.
ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
American Welding & Mfg. Co., Dietz Rd., Warren, Ohio
Askania Regulator Co., 240 E. Ontario St., Chicago 11, Ill.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
CANADAIR LTD., P. O. Box 6987, Montreal, Que., Canada ADV. PG. 185
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
FORD INSTRUMENT CO., DIV. OF SPERRY-RAND CORP., 31—10 Thomson Ave., Long Island 1, N. Y. ADV. PG. 183
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV. 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Nuclear Corp., 550 Fifth Ave., New York 26, N. Y.
General Regulator Corp., 666 Fifth Ave., New York 19, N. Y.
Hydel, Inc., 99 First St., Cambridge 41, Mass.
L & S Machine Co., Inc., P. O. Box 317, R. D. 2, Latrobe, Pa.
Leach Corp., 18435 Susana Rd., Compton, Calif.
LYNDON AIRCRAFT, 140 Clifford St., Newark, N. J. ADV. PG. 250
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N. Y.
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.

MARVEL-SCHEBLER PRODUCTS DIV. OF BORG-WARNER CORP., Decatur, Ill. ADV. PG. 161
Peerless Instrument Co., Inc., 90—15 Corona Ave., Elmhurst 73, N. Y.
Precision Methods & Machine, Inc., Cumberland Drive, Waterbury, Conn.
Sanders Associates, Inc., 95 Canal St., Nashua, N. H.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Trio Machine Works, Inc., 3045 N. 3rd St., Philadelphia 33, Pa.
UNITED SHOE MACHINERY CORP., ATOMIC POWER DEPT., RESEARCH DIV., Balch St., Beverly, Mass. ADV. PG. 78, 79
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Western Gear Corp., P. O. Box 182, Lynwood, Calif.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10

CONTROL-ROD DRIVES

ACF INDUSTRIES, INC., NUCLEAR PRODUCTS-ERCO DIV., 508 Kennedy St., N. W., Washington 11, D. C. ADV. PG. 43
AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Airborne Accessories Corp., 1414 Chestnut Ave., Hillside 5, N. J.
ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
CANADAIR LTD., P. O. Box 6987, Montreal, Que., Canada ADV. PG. 185
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
FORD INSTRUMENT CO., DIV. OF SPERRY-RAND CORP., 31—10 Thomson Ave., Long Island City 1, N. Y. ADV. PG. 183
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
GENERAL MILLS, INC., MECHANICAL DIV., NUCLEAR EQUIPMENT DEPT., 1620 Central Ave., N. E., Minneapolis, Minn. ADV. PG. 60, 61
General Nuclear Corp., 550 Fifth Ave., New York 26, N. Y.
General Regulator Corp., 666 Fifth Ave., New York 19, N. Y.
Hydel, Inc., 99 First St., Cambridge 41, Mass.
LYNDON AIRCRAFT, 140 Clifford St., Newark, N. J. ADV. PG. 250
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N. Y.
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
MARVEL-SCHEBLER PRODUCTS DIV. OF BORG-WARNER CORP., Decatur, Ill. ADV. PG. 161
Precision Methods & Machine, Inc., Cumberland Drive, Waterbury, Conn.
Sanders Associates, Inc., 95 Canal St., Nashua, N. H.
Sunstrand-Turbo Div. of Sunstrand Machine Tool, Pacoima, Calif.
TELEFLEX, INC., North Wales, Pa. ADV. PG. 240
Thomson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Trio Machine Works, Inc., 3045 N. 3rd St., Philadelphia 33, Pa.
UNITED SHOE MACHINERY CORP., ATOMIC POWER DEPT., RESEARCH DIV., Balch St., Beverly, Mass. ADV. PG. 78, 79
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
Western Gear Corp., P. O. Box 182, Lynwood, Calif.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10

CONTROL RODS

ACF INDUSTRIES, INC., NUCLEAR PRODUCTS-ERCO DIV., 508 Kennedy St., N. W., Washington 11, D. C. ADV. PG. 43
AMF Atomics, a Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
CANADAIR LTD., P. O. Box 6987, Montreal, Que., Canada ADV. PG. 185
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Regulator Corp., 666 Fifth Ave., New York 19, N. Y.
Handy & Harman, 82 Fulton St., New York 38, N. Y.
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany
Martin Co., The, Nuclear Div., Mial J340, Baltimore 3, Md.
Metals Research & Development, Inc., Tunkhannock Ave., Exeter, Pa.
NATIONAL BERYLLIA CORP., 4501 Dell Ave., North Bergen, N. J. ADV. PG. 254
NUCLEAR MATERIALS & EQUIPMENT CORP., 680 Warren Ave., Apollo, Pa. ADV. PG. 163
Precision Methods & Machine, Inc., Cumberland Drive, Waterbury, Conn.
Sintercast Corp. of America, 134 Woodworth Ave., Yonkers, N. Y.
SUPERIOR TUBE CO., Box 191, Norristown, Pa. ADV PG. 71
SYLVANIA-CORNING NUCLEAR CORP., 208—20 Willetts Point Blvd., Bayside, N. Y. ADV. PG. 141
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
T. I. NUCLEAR ENGINEERING, LTD., The Adelphi London, W. C. 2, England ADV. PG. 66
U. S. Borax & Chemical Corp., Pacific Coast Borax Co., Div., 50 Rockefeller Plaza New York 20, N.Y.
U. S. PIPE & FOUNDRY CO., STEEL & TUBES DIV., Burglington, N. J. ADV. PG. 14, 15
Vard Inc., 2981 E. Colorado St., Pasadena 8, Calif.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10
Willamette Iron & Steel Co., 2800 N. W. Front Ave., Portland 10, Ore.

CONTROLLERS—Proportioning

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Advanced Instruments, Inc., 46-N Kenneth St., Newton Highlands 61, Mass.
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Askania Regulator Co., 240 E. Ontario St., Chicago 11, Ill.
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio ADV. PG. 230
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill.
Barton Instrument Corp., 580 Monterey Pass Rd., Monterey Park, Calif.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Brooks Rotometer Co., Box 432, Lansdale, Pa.
Control A Div. of Magnetics, Inc., Box 391, Butler, Pa.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Electronic Processes Corp., 2190 Folsom St., San Francisco 10, Calif.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Falk & Co., Ltd., M., Emefco House, Dell St., Reigate (Surrey), England
Fenwal Inc., Pleasant St., Ashland, Mass.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
General Regulator Corp., 666 Fifth Ave., New York 19, N. Y.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Lapp Insulator Co., Inc., 40 Gilbert St., LeRoy, N. Y.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV PG. 72, 73
Leslie Co., 299 Grant Ave., Lyndhurst, N. J.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
Nuclear Research Applications, Ltd., Emefco House, Dell St., Reigate (Surrey) England
Potter Aeronautical Corp., Route 22, Union, N. J.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
Raytheon Mfg. Co., Nuclear Power Group, 28 Seyon St., Waltham 54, Mass.
Ray Co., Milton, 1300 E. Mermaid Lane, Philadelphia 18, Pa.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Swartwout Co., 18511 Euclid Ave., Cleveland 12, Ohio
Telecomputing Corp., 915 Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
West Instrument Corp., 4363 W. Montrose Ave., Chicago 41, Ill.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30 Pa. ADV. PG. 7—10

CONTROL PANELS

See CONSOLES and CABINETS.

CONTROLS—Film Thickness

See GAGES—Thickness, Nonradioactivity
GAGES—Thickness or Density, Radioactivity

CONTROLS—Fluid Flow

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 234 Air Way, Glendale, Calif.
Askania Regulator Co., 240 E. Ontario St., Chicago 11, Ill.
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio ADV. PG. 230
AUTOMATIC SWITCH CO., 56-N Hanover Rd., Florham Park, N. J. ADV. PG. 99
B-I-F Industries, Inc., 530-D Harris Ave., Providence 1, R. I.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Barton Instrument Corp., 580 Monterey Pass Rd., Monterey Park, Calif.
BENDIX AVIATION CORP., BENDIX-PACIFIC DIV., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bowmar Instrument Corp., 8000 Bluffton Rd., Fort Wayne, Ind.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Brooks Rotameter Co., Box 432, Lansdale, Pa.
Controls Co. of America, 2450 N. 32nd St., Milwaukee 45, Wis.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Denison Engineering Div., American Brake Shoe Co., 1160 Dublin Rd., Columbus 19, Ohio
Dietz Co., Inc., Henry G., 12—16 Astoria Blvd., Long Island City 2, N. Y.
Eclipse Fuel Engineering Co., 1100 Buchanan, Rockford, Ill.
Electronic Control Corp., 1573 E. Forest Ave., Detroit 7, Mich.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Fielden Electronics, Ltd., Paston Rd., Whytenshawe, Manchester, England
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Flow-Actuated Control Co., Inc., 17—19 Park Row, New York 38, N. Y.
Foster Engineering Co., 835 Lehigh Ave., Union, N. J.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Gems Co., P. O. Box 222, Newington, Conn.
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
General Regulator Corp., 666 Fifth Ave., New York 19, N. Y.
Gulton Industries, Durham Ave., Metuchen, N. J.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Hanna Engineering Works, 1767 N. Elston Ave., Chicago 22, Ill.
Hays Mfg. Co., 814 W. 12th St., Erie, Pa.
Jordan Electronics, A Div. of The Victoreen Instrument Co., 3025 W. Misso Rd., Alhambra, Calif.
Keckley Co., O. C., 3400 Cleveland St., Skokie, Ill.
Kieley & Mueller Co., Inc., 64 Genung St., Middletown, N. Y.
Lapp Insulator Co., Inc., 40 Gilbert St., LeRoy, N. Y.
Leslie Co., 299 Grant Ave., Lyndhurst, N. J.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
LIQUID METALS, INC., Box 266, Westford, Mass. ADV. PG. 253
MAGNETROL, INC., 2115 S. Marshall Blvd., Chicago 23, Ill. ADV. PG. 222

Mason-Neilan, Nahatan St., Norwood, Mass.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Mercoid Corp., 4201 Belmont Ave., Chicago 41, Ill.
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Negretti & Zambra Ltd., 122 Regent St., London, W. 1, England
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. ADV. PG. 198, 199
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 1, N. Y.
Potter Aeronautical Corp., Route 22, Union, N. J.
Revere Corp. of America, Wallingford, Conn.
ROBERTSHAW-FULTON CONTROLS CO., FULTON SYLPHON DIV., P. O. Box 400, Knoxville 1, Tenn. ADV. PG. 178
Sarco Co., Inc., 350 Fifth Ave., New York 1, N. Y.
Simplex Valve & Meter Co., 7 E. Orange St., Lancaster, Pa.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Swartwout Co., 18511 Euclid Ave., Cleveland 12, Ohio
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Trans-Sonics, Inc., P. O. Box 328, Lexington 73, Mass.
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
Victory Engineering Corp., 77 Springfield Rd., Union, N. J.
Wagner Electric Co., 6400 Plymouth Ave., St. Louis 14, Mo.
Wallace & Tiernan, Inc., 25 Main St., Belleville 9, N. J.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10
Worner Electronic Devices, Rankin, Ill.

CONTROLS—Humidity

AEG — ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Abbeon Supply Co., 179—15 Jamaica Ave., Jamaica 32, N. Y.
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio ADV. PG. 230
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill.
Beckman/Scientific & Process Instruments Div., Beckman Instruments, Inc., 2500 Fullerton Rd., Fullerton, Calif.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
El-Tronics, Inc., Suburban Station Bldg., Philadelphia Pa.
Fielden Electronics, Ltd., Paston Rd., Whythenshawe, Manchester, England
Fisher & Porter Co., 50 Warminster Rd., Hatboro, Pa.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
FRIEZ INSTRUMENT DIV., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
Grinnell Co., 260 W. Exchange St., Providence 1, R. I.
H-B Instrument Co., American & Bristol Sts., Philadelphia 40, Pa.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Leonard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Mason-Neilan, Nahatan St., Norwood, Mass.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co. 2753 Fourth Ave., S., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Modern Laboratory Equipment Co., Dept. N, 1809—11 First Ave., New York 28, N. Y.
Negretti & Zambra, Ltd., 122 Regent St., London, W. 1, England
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. ADV. PG. 198, 199
Partlow Corp., The, Dept. NBG-58, New Hartford, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Photobell Co., Inc., 43 Vesey St., New York 7, N. Y.
Powers Regulator Co., The, 3400 Oakton St., Skokie 81 Ill.
Serdex, Inc., 12 Bowdoin Square, Boston 14, Mass.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Victory Engineering Corp., 77 Springfield Rd., Union, N. J.
Weksler Instruments Corp., 195 E. Merrick Rd., Freeport, N. Y.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.

CONTROLS—Liquid Level

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Airmec, Ltd., High Wycombe, Buckinghamshire, England
Allen-Bradley Co., 136 W. Greenfield Ave., Milwaukee 4, Wis.
Askania Regulator Co., 240 E. Ontario St., Chicago 11, Ill.
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio ADV. PG. 230
Atlas Valve Co., 280 South St., Newark 5, N. J.
Automatic Timing & Controls, Inc., King of Prussia, Pa.
Autotron Co., Box 722, Danville, Ill.
B-I-F Industries, Inc., 530-D Harris Ave., Providence 1, R. I.
B/W Controller Corp., 2200 E. Maple Rd., Birmingham, Mich.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Barton Instrument Corp., 580 Monterey Pass Rd., Monterey Park, Calif.
BENDIX AVIATION CORP., BENDIX-PACIFIC DIV., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Black, Sivalls & Bryson, Inc., 7500 E. 12th St., Kansas City 26 Mo.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Brooks Rotameter Co., Box 432, Lansdale, Pa.
Burndept Ltd., West St., Erith, Kent, U. K.
Clark Controller Co. 1146 E. 152nd St., Cleveland 10, Ohio
Collins Corp., G. L., 2820 Hullett St., Long Beach Calif.
Controls Co. of America, 2450 N. 32nd St., Milwaukee 45 Wis.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 691 Central Ave., Carlstadt, N. J. ADV. PG. 220
Cutler-Hammer, Inc., 412 N. 12th St., Milwaukee 1, Wis.
Dietz Co., Inc., Henry G., 12—16 Astoria Blvd., Long Island City 2, N. Y.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Fielden Electronics Ltd., Paston Rd., Whytenshawe, Manchester, England
Fischer & Porter Co. 50 Warminster Rd., Hatboro, Pa.
Fisher Governor Co., Marshalltown, Iowa
Foster Engineering Co., 835 Lehigh Ave., Union, N. J.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Gems Co., P. O. Box 222, Newinton, Conn.
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
General Regulator Corp., 686 Fifth Ave., New York 19, N. Y.
Gulton Industries, Durham Ave., Metuchen, N. J.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Hays Corp., Michigan City 40, Ind.
Industrial Instruments, Inc., 89 Commerce Rd., Cedar Grove, N. J.
Industrial Nucleonics Corp. 1205 Chesapeake Ave., Columbus 12, Ohio
Instruments, Inc., 322 N. Madison P. O. Box 556 Tulsa, Okla.
Isotope Products Div., Canadian Curtiss-Wright, Ltd., Davis Rd., Oakville, Ontario, Canada
Johnson Corp. 809 Wood St., Three Rivers, Mich.
Jordan Electronics a Div. of the Victoreen Instrument Co., 3825 W. Mission Rd., Alhambra, Calif.
Keckley Co., O. C., 3400 Cleveland St., Skokie, Ill.
Kieley & Mueller Co. Inc., 64 Gerung St., Middletown, N. Y.
Leslie Co., 299 Grant Ave., Lyndhurst, N. J.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
LIQUID METALS, INC., Box 266, Westford, Mass. ADV. PG. 233
Lunkenheimer Co., The, Beckman St. & Waverly Ave., Cincinnati 14, Ohio
Magnetic Instruments Co., Inc., 546 Commerce St., Thornwood, N. Y.
MAGNETROL, INC., 2115 S. Marshall Blvd., Chicago 23, Ill. ADV. PG. 222
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Mason-Neilan, Nahatan St., Norwood, Mass.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Mercoid Corp. 4201 Belmont Ave., Chicago 41, Ill.
Meriam Instrument Co., The, 10920 Madison Ave., Cleveland 2, Ohio
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
NARDA ULTRAONIC CORP., Dept. NBG, 625 Main St., Westbury, N. Y. ADV. PG. 113
Negretti & Zambra, Ltd., 122 Regent St., London, W. 1, England
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO. 238 Main St., Cambridge 42, Mass. ADV. PG. 198, 199
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 1, N. Y.
Nuclear Research Corp., Southampton, Pa.
Ohmart Corp., 2236 Bogen St., P. O. Box 67, Sta. B, Cincinnati 22, Ohio
Photobell Co., Inc., 43 Vesey St., New York 7, N. Y.
Powers Regulator Co. The, 3400 Oakton St., Skokie 81, Ill.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
Revere Corp. of America, Wallingford, Conn.
Robertshaw-Fulton Controls Co., Aeronautical & Instrument Div., Santa Ana Freeway at Euclid Ave., Anaheim, Calif.
ROBERTSHAW-FULTON CONTROLS CO., FULTON SYLPHON DIV., P. O. Box 400, Knoxville 1, Tenn. ADV. PG. 178
Sarco Co., Inc., 350 Fifth Ave. New York 1 N. Y.
Simmonds Aerocessories Inc. 105 White Plains Rd., Tarrytown, N. Y.
Simplex Valve Meter Co., 7 E. Orange St., Lancaster, Pa.
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146 Bd. de Charrone, Paris, France
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Swartwout Co., 18511 Euclid Ave., Cleveland 12, Ohio
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 24555 Euclid Ave., Cleveland 17, Ohio
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Trans-Sonics, Inc., P. O. Box 328, Lexington 73, Mass.
Trimount Instrument Co., 3119 W. Lake St., Chicago 12, Ill.
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Victory Engineering Corp., 77 Springfield Rd., Union, N. J.
Wallace & Tiernan, Inc., 25 Main St., Belleville 9, N. J.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10.
Worner Electronic Devices, Rankin, Ill.
Yarnall-Waring Co., Chestnut Hill, Philadelphia 18, Pa.

CONTROLS—pH

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Advanced Instruments, Inc., 46-N Kenneth St., Newton Highlands 61, Mass.
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio ADV. PG. 230
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Beckman/Scientific & Process Instruments Div., Beckman Instruments, Inc., 2500 Fullerton Rd., Fullerton, Calif.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
Fielden Electronics, Ltd., Paston Rd., Whythenshawe, Manchester England
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
FRIEZ INSTRUMENT DIV., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
La Motte Chemical Products Co., Chestertown, Md.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
Macbeth Instrument Corp., Little Britain Rd., Newburgh N. Y.
Measurement Engineering Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Nurnberg Thermometer Co., Inc., 134 Livingston St., Brooklyn 1, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V. Eindhoven, Holland ADV. PG. 86
Photovolt Corp., 95 Madison Ave., New York 16, N. Y.
PINTSCH BAMAGAG, Postfach 11, Butzbach, Germany ADV. PG. 63
Rascher & Betzold, Inc. 730 N. Franklin St., Chicago 10, Ill.
Swartwout Co., 18511 Euclid Ave., Cleveland 12, Ohio

Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Tenso-Lab Inc., South Buclout St., Irvington-on-Hudson, N. Y.
Weston Istruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.

CONTROLS—Pressure

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Allen-Bradley Co., 136 W. Greenfield Ave., Milwaukee 4, Wis.
Askania Regulator Co., 240 E. Ontario St., Chicago 11, Ill.
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio **ADV. PG. 230**
Atlas Valve Co., 280 South St., Newark 5, N. J.
Autoclave Eng. Sales Corp., 2930 W. 22nd St., Erie, Pa.
Automatic Timing & Controls, Inc., King of Prussia, Pa.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill
Barton Instrument Corp., 580 Monterey Pass Rd., Monterey Park, Calif.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. **ADV. PG. 144, 145**
Bently Scientific Co., 2811 Seventh St., Berkeley 10, Calif.
Black, Sivalls & Bryson Inc., 7500 E. 12th St., Kansas City 26, Mo.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Clark Controller Co., 1146 E. 152nd St., Cleveland 10, Ohio
Clark Mfg. Co., 1830 E. 38th St., Cleveland 14, Ohio
Collins Corp., G. L., 2820 Hullett St., Long Beach, Calif.
Consolidated Controls Corp., Durant Ave., Bethel, Conn.
Controls Co. of America, 2450 N. 32nd St., Milwaukee 45, Wis.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. **ADV. PG. 220**
Cutler-Hammer, Inc., 412 N. 12th St., Milwaukee 1, Wis.
Denison Engineering Div., American Brake Shoe Co., 1160 Dublin Rd., Columbus 19, Ohio
DeVilbiss Co., 300 Phillips Ave., Toledo, Ohio
Dietz Co., Inc., Henry G., 12—16 Astoria Blvd., Long Island City 2, N. Y.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Fielden Electronics Ltd., Paston Rd., Whytenshawe, Manchester, England
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Fisher Governor Co., Marshalltown, Iowa
Foster Engineering Co., 835 Lehigh Ave., Union, N. J.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. **ADV. PG. 94, 95**
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. **ADV. PG. 37—39**
General Regulator Corp., 666 Fifth Ave., New York 19, N. Y.
Giannini & Co., G. M., 918 Green St., Pasadena Calif.
Gulton Industries, Durham Ave., Metuchen, N. J.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Hammel-Dahl Co., Warwick Industrial Park, Providence 5, R. I.
Hanna Engineering Works, 1767 N. Elston Ave., Chicago 22, Ill
Hastings-Raydist, Inc., Newcomb Ave., Hampton, Va.
Industrial Engineering Corp., 525 E. Woodbine, Louisville, Ky.
Jordan Corp., Div. of OPW Corp., 6013 Wiehe Rd., Cincinnati 13, Ohio
Keckley Co., O. C., 3400 Cleveland St., Skokie, Ill.
Kieley & Mueller Co., Inc., 64 Genung St., Middletown, N. Y.
Leach Corp., 18435 Susana Rd., Compton, Calif.
Leslie Co., 299 Grant Ave., Lyndhurst, N. J.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. **ADV. PG. 246**
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Mason-Neilan, Nahatan St., Norwood, Mass.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Mercoid Corp., 4201 Belmont Ave., Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., 2735 Fourth Ave. S., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Negretti & Zambra, Ltd., 122 Regent St., London, W. 1, England
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
Powers Regulator Co., The, 3400 Oakton St., Skokie 81, Ill.
ROBERTSHAW-FULTON CONTROLS CO., FULTON SYLPHON DIV., P. O. Box 400, Knoxville 1, Tenn. **ADV. PG. 178**
Servomechanisms, Inc., 12500 Aviation Blvd., Hawthorne, Calif.
Squires Co., C. E., 18805 Syracuse Ave., Cleveland 10, Ohio
Sunvic Controls Ltd., 10 Essex St., Strand London, W. C. 2, England
Swartwout Co., 18511 Euclid Ave., Cleveland 12, Ohio
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Trans-Sonics, Inc., P. O. Box 328, Lexington 73, Mass.
Trimount Instrument Co., 3119 W. Lake St., Chicago 12, Ill.
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Vickers Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
Wallace & Tiernan, Inc., 25 Main St., Belleville 9, N. J.
Watts Regulator Co., 10 Embankment St., Lawrence, Mass
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. **ADV. PG. 7—10**
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.

CONTROLS—Speed

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Airpax Products Co., Seminole Div., Fort Lauderdale, Fla.
Allen-Bradley Co., 136 W. Greenfield Ave., Milwaukee 4, Wis.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. **ADV. PG. 84, 85**
Askania Regulator Co., 240 E. Ontario St., Chicago 11, Ill.
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio **ADV. PG. 230**
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. **ADV. PG. 144, 145**
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Clark Controller Co., 1146 E. 152nd St., Cleveland 10, Ohio
Consolidated Controls Corp., Durant Ave., Bethel, Conn.
Cutler-Hammer, Inc., 412 N. 12th St., Milwaukee 1, Wis.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. **ADV. PG. 94, 95**
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. **ADV. PG. 37-39**
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Hanna Engineering Works, 1767 N. Elston Ave., Chicago 22, Ill.
Huppert Co., K. H., 6830 S. Cottage Grove Ave., Chicago 7, Ill.
Kahn & Co., Inc., 541 Windsor St. Hartford 1, Conn.
Laboratory for Electronics, Inc., 75 Pitts St., Boston 14, Mass.
Leach Corp 18435 Susana Rd Compton Calif
LIBRASCOPE INC 808 Western Ave Glendale Calif ADV PG 246
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
Ohmite Mfg. Co., 3601 Howard St., Skokie, Ill.
Potter Aeronautical Corp., Route 22, Union, N. J.
Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio
Servo-Tek Products Co., 1086 Goffle Rd., Hawthorne, N. J.
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Superior Electric Co., The, 83 Laurel St., Bristol, Conn.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Varo Mfg. Co., Inc., 2201 Walnut St., Garland, Texas
Vickers Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. **ADV. PG. 7-10**
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.

CONTROLS—Temperature

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Advanced Instruments, Inc., 46—N Kenneth St., Newton Highlands 61, Mass.
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Airborne Accessories Corp., 1414 Chestnut Ave., Hillside 5, N. J.
Airmec Ltd., High Wycombe, Buckinghamshire, England
Allen-Bradley Co., 136 W. Greenfield Ave., Milwaukee 4, Wis.
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio **ADV. PG. 230**
Atlas Valve Co., 280 South St., Newark 5, N. J.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Barber-Colman Co., Wheelco Div., 1700 Rock t., Rockford, Ill.
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. **ADV. PG. 103**
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. **ADV. PG. 144, 145**
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Burling Instrument Co., Inc., 16 River Rd., Chathain, N. J.
Burndept Ltd., West St., Erith, Kent, U. K.
Communication Accessories Co., Lee's Summit, Mo.
Consolidated Controls Corp., Durant Ave., Bethel, Conn.
Control Products, Inc., 306 Sussex St., Harrison, N. J.
Controls Co. of America, 2450 N. 32nd St., Milwaukee 45, Wis.
Cox & Co., Inc., 115 E. 23rd St., New York 10, N. Y.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. **ADV. PG. 220**
Eclipse Fuel Engineering Co., 1100 Buchanan, Rockford, Ill.
Edison Industries, Thomas A., Instrument Div., West Orange, N. J.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Electronic Control Corp., 1573 E. Forest Ave., Detroit 7, Mich.
Electronic Processes Corp., 2190 Folsom St., San Francisco 10, Calif.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Fenwal Inc. Pleasant St. Ashland, Mass.
Fielden Electronics Ltd., Paston Rd., Whytenshawe, Manchester, England
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Foster Engineering Co., 835 Lehigh Ave., Union, N. J.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. **ADV. PG. 94, 95**
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. **ADV. PG. 37-39**
General Regulator Corp., 666 Fifth Ave., New York 19, N. Y.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
H-B Instrument Co., American & Bristol St., Philadelphia 40, Pa.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Hammel-Dahl Co., Warwick Industrial Park, Providence 5, R. I.
Harriss (Engineers), Granta Terrace, Stapleford, Cambridge, England
Hill & Co., E. Vernon, P. O. Box 189, Lake Geneva, Wis.
Illinois Testing Labs., 420 N. LaSalle St., Chicago, Ill.
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. **ADV. PG. 268**
Jordan Corp., Div. of OPW Corp., 6013 Wiehe Rd., Cincinnati 13, Ohio
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Keckley Co., O. C., 3400 Cleveland St., Skokie, Ill.
Leach Corp., 18435 Susana Rd., Compton, Calif.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. **ADV. PG. 72, 73**
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Leslie Co., 299 Grant Ave,. Lyndhurst, N. J.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. **ADV. PG. 246**
Magnetic Instruments Co., Inc., 546 Commerce St., Thornwood, N. Y.
Manning, Maxwell & Moore, Inc., 250 E. Main Stratford, Conn.
Mason-Neilan, Nahatan St., Norwood, Mass.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Mercoid Corp., 4201 Belmont Ave., Chicago 41, Ill.
Metals & Controls Corp., Spencer Thermostat Div., 40 Forest St., Attleboro, Mass.
Minneapolis-Honeywell Boston Div., 40 Life St., Boston 35, Mass.
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Modern Laboratory Equipment Co., Dept. N, 1809—11 First Ave., New York 28, N. Y.

Negretti & Zambra, Ltd., 122 Regent St., London, W. 1, England
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
Nuclear Research Applications, Ltd., Emefco House Bell St., Reigate (Surrey), England
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn, N. Y.
Partlow Corp., The, Dept. NBG-58, New Hartford, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Powers Regulator Co., The, 3400 Oakton St., Skokie 81, Ill.
Pyrometer Instrument Co., Inc., Bergenfield, N. J.
RBM Div., Essex Wire Corp., 131 Godfrey, Logansport, Ind.
ROBERTSHAW-FULTON CONTROLS CO., FULTON SYLPHON DIV., P. O. Box 400, Knoxville 1, Tenn. ADV. PG. 178
Ruge Associates, Inc., Arthur C., 733 Concord Ave., Cambridge 38, Mass.
Sarco Co., Inc., 350 Fifth Ave., New York 1, N. Y.
Serdex, Inc., 12 Bowdoin Square, Boston 14, Mass.
Squires Co., C. E., 18805 Syracuse Ave., Cleveland 10, Ohio
Stevens Mfg. Co., Inc., P. O. Annex 1007, Mansfield, Ohio
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Swartwout Co., 18511 Euclid Ave., Cleveland 12, Ohio
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thermo Electric Co., Inc., Saddle Brook, N. J.
Thermo Electric Mfg. Co., 465 Huff St., Dubuque, Iowa
Trans-Sonics, Inc., P. O. Box 328, Lexington 73, Mass.
Tri-R Instruments, 144—13 Jamaica Ave., Jamaica 35, N. Y.
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
Ulanet Co., George, 413 Market St., Newark 5, N. J.
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Victory Engineering Corp., 77 Springfield Rd., Union, N. J.
Watts Regulator Co., 10 Embankment St., Lawrence, Mass.
Weksler Instruments Corp., 195 E. Merrick Rd., Freeport, N. Y.
West Instrument Corp., 4363 W. Montrose Ave., Chicago 41, Ill.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.
Wiegand Co., Edwin L., 7895 Thomas Blvd., Pittsburgh 8, Pa.
Yellow Springs Instrument Co., Inc., P. O. Box 106, Yellow Springs, Ohio

CONTROLS—Timing

See also TIMERS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Abrams Instrument Corp., 600—620 E. Shiawassee St., Lansing, Mich.
Advanced Products Co., 59 Broadway, North Haven, Conn.
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Airpax Products Co., Seminole Div., Fort Lauderdale, Fla.
Allen-Bradley Co., 136 W. Greenfield Ave., Milwaukee 4, Wis.
Amglo Corp., 4333 Ravenswood Ave., Chicago 13, Ill.
Automatic Timing & Controls, Inc., King of Prussia, Pa.
Autotron Co., Box 722, Danville, Ill.
Belock Instrument Corp., 111—01 14th Ave., College Point, N. Y.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Branson Corp., Jefferson Rd., Whippany, N. J.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Controls Co. of America, 2450 N. 32nd St., Milwaukee 45, Wis.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Cramer Controls Corp., Box 13, Centerbrook, Conn.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Cutler-Hammer, Inc., 412 N. 12th St., Milwaukee 1, Wis.
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
Dietz Co., Inc., Henry G., 12—16 Astoria Blvd., Long Island City 2, N. Y.
Eagle Signal Corp., 202 20th St., Moline, Ill.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Electronic Control Corp., 1573 E. Forest Ave., Detroit 7, Mich.
Electronic Engineering Co. of California, 1601 E. Chestnut St., Santa Ana, Calif.
Electronic Processes Corp., 2190 Folsom St., San Francisco 10, Calif.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
Elm Laboratories, 10 Washington Ave., Hastings-on-Hudson, N. Y.
Ericssens Telephones, Ltd., Instrument Div., High Church St., New Basford, Nottingham, England
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
General Control Company, 1200 Soldiers Field Rd., Boston 34, Mass.
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
Haydon Co., A. W., The, 232 N. Elm St., Waterbury, Conn.
Industrial Timer Corp., 1407 McCarter Highway, Newark 4, N. J.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Leach Corp., 18435 Susana Rd., Compton, Calif.
Mallory & Co., Inc., P. R., 58 S. Gray St., Indianapolis 6, Ind.
Mason-Neilan, Nahatan St., Norwood, Mass.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
NORRMAN LABORATORIES, ERNST, Williams Bay, Wis. ADV. PG. 201
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
Paragon Electric Co., Two Rivers, Wis.
Partlow Corp., The, Dept. NBG-58, New Hartford, N. Y.
Peerless Instrument Co., Inc., 90—15 Corona Ave., Elmhurst 73, N. Y.
Ransom Research, P. O. Box 269, San Pedro, Calif.
Sangamo Electric Co., Electronics Div., Springfield, Ill.
Servomechanisms Inc., 12500 Aviation Blvd., Hawthorne, Calif.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
Ulanet Co., George, 413 Market St., Newark 5, N. J.
Vacuum Tube Products Co., Inc., 2020 Short St., Oceanside, Calif.
Walkirt Co., The, 141 W. Hazel St., Inglewood 3, Calif.
Weltronic Co., 19500 W. Eight Mile Rd., Detroit 41, Mich.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.
Wilson & Co., G. C., 1915 Eighth Ave., Huntington, W. Va.

CONTROLS—Vacuum

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio ADV. PG. 230
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Conoflow Corp., 2100 Arch St., Philadelphia 3, Pa.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Cutler-Hammer, Inc., 412 N. 12th St., Milwaukee 1, Wis.
Dahl Co., Inc., G. W., Tupelo St., Bristol, R. I.
Dietz Co., Inc., Henry G. 12—16 Astoria Blvd., Long Island City 2, N. Y.
Electronics Research Labs., 85 Surrey St., Brighton 35, Mass.
Fielden Electronics, Ltd., Paston Rd., Whytenshawe, Manchester, England
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Foster Engineering Co., 835 Lehigh Ave., Union, N. J.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Hastings-Raydist, Inc., Newcomb Ave., Hampton, Va.
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany
High Vacuum Equipment Corp., 2 Churchill Rd., Hingham, Mass.
International Pump & Machine Works, 61 Dorsa Ave., Livingston, N. J.
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
Kinetics Corp., 2 Churchill Rd., Hingham, Mass.
Kinney Mfg. Div., The New York Air Brake Co., 3529 Washington St., Boston 30, Mass.
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Mason-Neilan, Nahatan St., Norwood, Mass.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Mercoid Corp. 4201 Belmont Ave., Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
NRC EQUIPMENT CORP., A SUB. OF NATIONAL RESEARCH CORP., 88 Charlement St., Newton Highlands 61, Mass. ADV. PG. 159
National Instrument Labs., Inc., 828 Evarts St., N E, Washington, D. C.
National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.
Negretti & Zambra, Ltd., 122 Regent St., London, W. 1, England
Process & Instruments, 15 Stone Ave., Brooklyn 33, N. Y.
Resitron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
ROBERTSHAW-FULTON CONTROLS CO., FULTON SYLPHON DIV., P. O. Box 400, Knoxville 1, Tenn. ADV. PG. 178
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Trans-Sonics, Inc., P. O. Box 328, Lexington 73, Mass.
Vacuum Industrial Applications, Ltd., Netherton, Rd., Wishaw, Lanarkshire, Scotland
Vacuum Specialties Co., Inc., 34 Linden St., Somerville, Mass.
Vacuum Tube Products Co., Inc., 2020 Short St., Oceanside, Calif.
Veeco Vacuum Corp., 86 Denton Ave., New Hyde Park, N. Y.
Wallace & Tiernan, Inc., 25 Main St., Belleville 9, N. J.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave. Newark 12, N. J.

CONTROLS—Viscosity

ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio ADV. PG. 230
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Servomechanisms, Inc., 12500 Aviation Blvd., Hawthorne, Calif.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
Wiegand Co., Edwin L., 7895 Thomas Blvd., Pittsburgh 8, Pa.

CONVERTERS—Analog-to-Digital

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Burroughs Corp., Electronic Tube Div., P. O. Box 1226, Plainfield, N. J.
Consolidated Controls Corp., Durant Ave., Bethel, Conn.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
Cubic Corp., 5575 Kearny Villa Rd., San Diego 11, Calif.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Detroit Controls Div. of American-Standard, 100 Morse St., Norwood, Mass.
DI-AN Controls, Inc., 40 Leon St., Boston 15, Mass.
Digitran Co., The, 45 W. Union St., Pasadena, Calif.
Dychro Corp. 12 Centre Ave., Newton 58, Mass.
ECLIPSE-PIONEER DIV., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Electronic Associates, Inc., Long Branch, N. J.
Electronic Communications, Inc., 1501 72nd St., N., St. Petersburg, Fla.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Ericssons Telephones, Ltd., Instrument Div., High Church St., New Basford, Nottingham, England
Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N. Y.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
FORD INSTRUMENT CO., DIV. OF SPERRY-RAND CORP., 31—10 Thomson Ave., Long Island City 1, N. Y. ADV. PG. 183

FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Franklin Electronics, Inc., E. Fourth St., Bridgeport, Pa.
Giannini & Co., Inc., G. M., 918 E. Green St., Pasadena 2, Calif.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1946, Pittsburgh 30, Pa.
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Hydel, Inc., 99 First St. Cambridge 41, Mass.
Instrument Development Lab., Inc., 67 Mechanic St., Attleboro, Mass.
Kearfott Co., Inc., Engineering & Sales Div., 1378 Main Ave., Clifton, N. J.
Kin Tel, 5725 Kearny Villa Rd., San Diego 11, Calif.
LIBRASCOPE, INC., 808 Western Av., Glendale, Calif. ADV. PG. 246
MacLeod & Hanopol, Inc., 10 Roland St., Charlestown 29, Mass.
Measurement Engineering Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Mullard Equipment Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Potter Aeronautical Corp., Route 22, Union, N. J.
Radiation, Inc., P. O. Box 37, Melbourne, Fla.
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Ransom Research, P. O. Box 269, San Pedro, Calif.
Reeves Instrument Corp., Roosevelt Field, Garden City, N. Y.
Servomechanisms, Inc., 12500 Aviation Blvd., Hawthorne, Calif.
Streeter-Amet Co., Grayslake, Ill.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Thompson-Ramo-Wooldridge Co., The, P. O. Box 45067, Airport Station, Los Angeles 45, Calif.
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Wang Laboratories, Inc., 37 Hurley St., Cambridge 41, Mass.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.

CONVERTERS—Digital-to-Analog

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Colorado Research Corp., Broomfield Heights, Colo.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
DI-AN Controls, Inc., 40 Leon St., Boston 15, Mass.
Digitran Co., The, 45 W. Union St., Pasadena, Calif.
Electronic Associates Inc., Long Branch, N. J.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N. Y.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Giannini & Co., Inc., G. M., 918 E. Green St., Pasadena 2, Calif.
Hydel, Inc., 99 First St. Cambridge 41, Mass.
Kearfott Co., Inc., Engineering & Sales Div., 1378 Main Ave., Clifton, N. J.
Kin Tel, 5725 Kearny Villa Rd., San Diego 11, Calif.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Navigation Computer Corp., 1621 Snyder Ave., Philadelphia 45, Pa.
Potter Aeronautical Corp., Route 22, Union, N. J.
Radiation, Inc., P. O. Box 37, Melbourne, Fla.
Ransom Research, P. O. Box 269, San Pedro, Calif.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland, Ohio
Thompson-Ramo-Wooldridge Co., The, P. O. Box 45067, Airport Station, Los Angeles 45, Calif.
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.

CONVERTERS—Rotary

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Carter Motor Co., 2742 W. George St., Chicago 18, Ill.
Colorado Research Corp., Broomfield Heights, Colo.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Eicor Div. The Scranton Corp., 4059 W. North Ave., Chicago 39, Ill.
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Georator Corp., Manassas, Va.
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58, N. Y. ADV. PG. 227
Leach Corp., 18435 Susana Rd., Compton, Calif.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Sangamo Electric Co., Electronics Div., Springfield, Ill.
Struthers-Wells Corp., Warren, Pa.
Thompson Products, Inc., Napco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Varo Mfg. Co., Inc., 2201 Walnut St., Garland, Texas
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Western Gear Corp., P. O. Box 182, Lynwood, Calif.

CONVERTERS—Time-to-Pulse Height

See ANALYZERS—Time-of-Flight

COOLANTS

See WATER—Heavy

COOLING TOWERS

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Custodis Construction Co., Inc., 157 Chambers St., New York, N. Y.
Dunham-Bush, Inc., 179 South St., West Hartford 10, Conn.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Fluor Products Co., 12000 E. Washington Blvd., Whittier, Calif.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
Marley Co., 222 W. Gregory Blvd., Kansas City, Mo.
NATIONAL CARBON CO., DIV. OF UNION CARBIDE CORP., 30 E. 42nd St., New York 17, N. Y. ADV. PG. Fourth Cover
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
Smith Corp., A. O., 3533 N. 27th St., Milwaukee 1, Wis.
Taylor Woodrow Construction Ltd., Ruislip Rd., Southall, Middlesex, Great Britain
Willamette Iron & Steel Co., 2800 N. W. Front Ave., Portland 10, Ore.
York Corp., York, Pa.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

COUNTERS

See also GEIGER MULLER TUBES

COUNTERS—Alpha

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Airmec Ltd., High Wycombe, Buckinghamshire, England
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
ATOMIC ACCESSORIES INC., 244—04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
BALL BROTHERS RESEARCH CORP., Industrial Park, Boulder, Colo. ADV. PG. 74
Burndept Ltd., West St., Erith, Kent, U. K.
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
Eberline Instrument Corp., P. O. Box 270, Santa Fe, N. M.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
Land Air, Inc., 2133 Adams Ave., San Leandro, Calif.
Mullard Ltd., Mullard House, Torrington Pl., London W. C. 1 England
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NATIONAL RADIAC, INC., 479 Washington St., Newark 2, N. J. ADV. PG. 233
Nuclear Aids Corp., 612 N. Michigan Ave., Chicago, Ill.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Nuclear Development Laboratory, P. O. Box 7034, Kansas City, Mo.
Nuclear—Electronics Corp., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey) England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Pacific Transducer Corp., 11836 SW Pico Blvd., Los Angeles 64, Calif.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB. 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
SINGLE CRYSTAL CORP. OF AMERICA, R D 1, Saxonburg Blvd., Saxonburg, Pa. ADV. PG. 246
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
UNIVERSAL ATOMICS, DIV. OF UNIVERSAL TRANSISTOR PRODUCTS CORP., 17 Brooklyn Ave., Westbury, N. Y. ADV. PG. 194
VICTOREEN INSTRUMENT CO., 5800-11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
WOOD COUNTER LABORATORY, N., 1525 E. 53rd St., Chicago 15, Ill. ADV. PG. 207

COUNTERS—Beta

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Airmec Ltd., High Wycombe, Buckinghamshire, England
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ANTON ELECTRONIC LABS., INC. 1226—38 Flushing Ave Brooklyn 37, N. Y. ADV PG 106
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
ATOMIC ACCESSORIES INC., 244—04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67—70
BALL BROTHERS RESEARCH CORP., Industrial Park, Boulder, Colo. ADV. PG. 74
Burndept Ltd., West St., Erith, Kent, U. K.
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
E. M. I. ELECTRONICS LTD. Hayes, Middlesex, England ADV. PG. 236
Eberline Instrument Corp., P. O. Box 270, Santa Fe, N. M.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Electronic Products Co., 111 E. Third St., Mount Vernon, N. Y.
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston, Ill. ADV. PG. 229
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
ISOTOPES, INC., 123 Woodland Ave., Westwood, N. J. ADV. PG. 148
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
ISOTOPE DEVELOPMENTS LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226

NUCLEAR AND ALLIED PRODUCTS

Labear Ltd., Nucleonics Div., Willow Place, Cambridge, England
Mullard Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NATIONAL RADIAC, INC., 479 Washington St., Newark 2, N. J. ADV. PG. 233
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Nuclear Development Laboratory, P. O. Box 7034, Kansas City, Mo.
NUCLEAR-ELECTRONICS CORP., 292 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Application Ltd., Emefco House, Bell St., Reigate (Surrey), England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
PACKARD INSTRUMENT CO., INC., P. O. Box 428, La Grange, Ill. ADV. PG. 82
PHILIPS'GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Precision Radiation Instruments, Inc., 5810 S. Normandie, Los Angeles 44, Calif.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St. Chicago 21, Ill. ADV. PG. 271
RADIOCHEMISTRY, INC., 1111 W. St. Catherine St., Louisville 1, Ky. ADV. PG. 242
SINGLE CRYSTAL CORP. OF AMERICA, RD 1, Saxonburg, Pa. ADV. PG. 246
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Twentieth Century Electronics Ltd., Centronics Works, King Henry's Drive, New Addington, Surrey, England
UNIVERSAL ATOMICS, DIV. OF UNIVERSAL TRANSITOR PRODUCTS CORP., 17 Brooklyn Ave., Westbury, N. Y. ADV. PG. 194
VICTOREEN INSTRUMENT CO., 5806-11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Western Radiation Lab., 1107 W. 24th St., Los Angeles 7, Calif.
WOOD COUNTER LABORATORY, N., 1525 E. 53rd St., Chicago 15, Ill. ADV. PG. 207

COUNTERS—Binary or Decade

See SCALERS—Binary
SCALERS—Decade

COUNTERS—Electromechanical, Direct Reading

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Abrams Instrument Corp., 600-620 E. Shiawassee St., Lansing, Mich.
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
Bowmar Instrument Corp., 8000 Bluffton Rd., Fort Wayne, Ind.
Colorado Research Corp., Broomfield Heights, Colo.
Cramer Controls Corp., Box 13, Centerbrook, Conn.
Cyclotron Specialties Co., Moraga 8, Calif.
Digitran Co., The, 45 W. Union St., Pasadena, Calif.
Durant Mfg. Co., 1996 N. Buffam St., Milwaukee 1, Wis.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Electric Tachometer Corp., 60th & Upland Sts., Philadelphia 42, Pa.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
English Numbering Machines, Ltd., Queensway, Ponders End, Enfield, Middlesex, England
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Freed Transformer Co., Inc., 1736 Weirfield St., Brooklyn 27, N. Y.
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
Guardian Electric Co., 1625 W. Walnut St., Chicago 12, Ill.
Hycon Electronics, Inc., P. O. Bin D, Pasadena, Calif.
Kearfott Co., Inc., Engineering & Sales Div., 1378 Main Ave. Clifton, N. J.
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
Landis & Gyr, Inc., 45 W. 45th St., New York 36, N. Y.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass. ADV. PG. 257
MEILLON, INC., GEORGE T., 132 Nassau St., New York 38, N. Y. ADV. PG. 243
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
Photocon Research Products, 421 N. Altadena Drive, Pasadena, Calif.
Presin Co., 2014 Broadway, Santa Monica, Calif.
Taller & Cooper, Inc., 75 Front St., Brooklyn N. Y.
Telecomputing Corp. 915 N. Citrus Ave., Los Angeles 38, Calif.
Veeder-Root, Inc., 70 Sargeant St., Hartford 2, Conn.
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.

COUNTERS—Electromechanical, Printing

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Alden Electronic & Impulse Recording Equipment Co., Westboro, Mass.
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Colorado Research Corp., Broomfield Heights, Colo.
Digitran Co., The, 45 W. Union St., Pasadena, Calif.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Labgear Ltd. Nucleonics Div., Willow Place, Cambridge, England
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Presin Co., 2014 Broadway, Santa Monica, Calif.
Societe D'Applications Industrielles de la Physique (S. A. I. P.), 146, Bd. de Charonne, Paris, France
Streeter-Amet Co., Grayslake, Ill.
Taller & Cooper, Inc., 75 Front St., Brooklyn, N. Y.
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.

COUNTERS—Electronic

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Airpax Products Co., Seminole Div., Fort Lauderdale, Fla.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
Automatic Timing & Controls, Inc., King of Prussia, Pa.
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67 70
BENDIX AVIATION CORP. CINCINNATI DIV., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bowmar Instrument Corp., 8000 Bluffton Rd., Fort Wayne, Ind.
Bruel & Kjaer, Naerum, Denmark
Burndept Ltd., West St., Erith, Kent, U. K.
Burroughs Corp., Electronic Tube Div., P. O. Box 1226, Plainfield, N. J.
Colorado Research Corp., Broomfield Heights, Colo.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Deltime, Inc., 608 Fayette Ave., Mamaroneck, N. Y.
DI-AN Controls, Inc., 40 Leon St., Boston 15 Mass.
Durant Mfg. Co., 1996 N. Buffam St., Milwaukee 1, Wis.
ELDORADO ELECTRONICS CO., 2821 10th St., Berkeley, Calif. ADV. PG. 252
Electronic Associates, Inc., Long Branch, N. J.
Electronic Control Corp., 1573 E. Forest Ave., Detroit 7, Mich.
Electronic Engineering Co. of California, 601 E. Chestnut St., Santa Ana, Calif.
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
Engineered Electronics Co., 58 E. First St., Santa Ana, Calif.
Ericsons Telephones, Ltd., Instrument Div., High Church St., New Basford, Nottingham, England
Erie Resistor Corp., 639 W. 12th St., Erie, Pa.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Franklin Electronics, Inc., E. Fourth St., Bridgeport, Pa.
Freed Transformer Co., Inc., 1736 Weirfield St., Brooklyn 27, N. Y.
General Radiological Ltd., 15-18 Clipstone St., London, W.1, England
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
ISOTOPE DEVELOPMENTS, LTD., Boorham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Inc. ADV. PG. 254
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
Landis & Gyr, Inc., 45 W. 45th St., New York 36, N. Y.
Lavoie Laboratories, Inc., Matawan Freehold R., Morganville, N. J.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Magnetic Instruments Co., Inc., 546 Commerce St., Thornwood, N. Y.
Magnetics Research Co., Inc., 255 Grove St., White Plains, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Navigation Computer Corp., 1621 Snyder Ave., Philadelphia 45, Pa.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 1, N. Y.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
NUCLEAR MEASUREMENTS CORP., 2460 N Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey) England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, (Surrey), England
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Photobell Co., Inc., 43 Vesey St., New York 7, N. Y.
Potter Aeronautical Corp., Route 22, Union, N. J.
Presin Co. 2014 Broadway, Santa Monica, Calif.
Rank Cintel Ltd., Worsley Bridge Rd., London, S. E. 26, England
Ransom Research, P. O. Box 269, San Pedro, Calif.
Servomechanisms, Inc., 12500 Aviation Blvd., Hawthorne, Calif.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Thompson Products, Inc., Staff Research & Development New Devices Dept., 7209 Platt Ave., Cleveland 4, Ohio
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
Veeder-Root, Inc., 70 Sargeant St., Hartford 2, Conn.
VICTOREEN INSTRUMENT CO., 5806—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Walkirt Co., The, 141 W. Hazel St., Inglewood 3 Calif.
Weltronic Co., 19500 W. Eight Mile Rd., Detroit 41, Mich.
Western Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.

COUNTERS—Flow

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Dentron Engineering, 1 Winslow St., Redwood City, Calif.
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Erie Resistor Corp., 639 W. 12th St., Erie, Pa.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston, Ill. ADV. PG. 229
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Enterprises (G. B.) Ltd., Sighthill, Edinburgh, Scotland
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 8, Ind. ADV. PG. 146
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
PACKARD INSTRUMENT CO., INC., P. O. Box 428, La Grange, Ill. ADV. PG. 82
Potter Aeronautical Corp., Route 22, Union, N. J.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271

RADIOCHEMISTRY, INC., 1111 W. St. Catherine St. Louisville 10, Ky. ADV. PG. 242
Revere Corp. of America, Wallingford, Conn.
Societe D'Applications Industrielles de la Physique (S. A. I. P.), 146, Bd. de Charonne, Paris, France
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151 152, 157
Twentieth Century Electronics Ltd., Centronics Works, King Henry's Drive, New Addington, Surrey, England
WOOD COUNTER LABORATORY, N., 1525 E. 53rd St., Chicago 15, Ill. ADV. PG. 207

COUNTERS—Gamma

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Airmec, Ltd., High Wycombe, Buckinghamshire, England
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
AMERICAN TRADAIR CORP. SUB. OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Island City 6, N. Y. ADV PG. 186
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMATION, INC., 5959 S Hoover St., Los Angeles 44, Calif. ADV. PG. 256
ATOMIC ACCESSORIES INC., 244—04 Jamaica Ave., Bellerose 2, N Y ADV. PG. 247
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
BALL BROTHERS RESEARCH CORP., Industrial Park, Boulder, Colo. ADV. PG. 74
Berkeley Crystal Co., 1740 University Ave., Berkeley 3, Calif.
Burndept Ltd., West St., Erith, Kent, U. K.
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
Eberline Instrument Corp., P. O. Box 279, Santa Fe, N. M.
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Electronic Products Co., 111 E. Third St., Mount Vernon, N. Y.
General Nuclear Co., 4957 Hollywood Blvd., Hollywood 27, Calif.
General Radiological, Ltd., 15—18 Clipstone St., London, W. 1, England
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Instruments, Inc., 122 N. Madison, P. O. Box 556, Tulsa, Okla.
ISOMET CORP., 118 Union St., Palisades Park, N. J. ADV. PG. 232
ISOTOPE DEVELOPMENTS, LTD., Beenham Grange, Aldermaston wharf, nr. Reading, Berks, England ADV. PG. 226
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV PG. 158, 229
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
LANDSVERK ELECTROMETER CO., 641 Sonora Ave., Glendale 1, Calif. ADV PG. 209
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass ADV PG. 257
MEILLON, INC., GEORGE T., 132 Nassau St., New York 38, N. Y. ADV. PG. 243
Menlo Research Laboratory, P. O. Box 522, Menlo Park, Calif.
Mullard Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NATIONAL RADIAC, INC., 479 Washington St., Newark 2, N. J. ADV. PG. 233
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Nuclear Development Laboratory, P. O. Box 7034, Kansas City, Mo.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
NUCLEAR ENTERPRISES, LTD., 1750 Pembina Highway, Winnipeg, Canada ADV. PG. 270
Nuclear Enterprises (G. B.) Ltd., Sighthill, Edinburgh, Scotland
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surrey), England
Nuclear Research Corp., Southampton, Pa.
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
PACKARD INSTRUMENT CO. INC., P. O. Box 428, La Grange, Ill. ADV PG. 82
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Precision Radiation Instruments, Inc., 5810 S. Normandie, Los Angeles 44, Calif.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
SINGLE CRYSTAL CORP. OF AMERICA, R D 1, Saxonburg Blvd., Saxonburg, Pa. ADV. PG. 246
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Chaparonne, Paris, France
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
Twentieth Century Electronics Ltd., Centronics Works, King Henry's Drive, New Addington, Surrey, England
UNIVERSAL ATOMICS, DIV. OF UNIVERSAL TRANSISTOR PRODUCTS CORP., 17 Brooklyn Ave., Westbury, N. Y ADV. PG. 194
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
WOOD COUNTER LABORATORY, N., 1525 E. 53rd St., Chicago 15, Ill. ADV. PG. 207

COUNTERS—Neutron

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
AMERICAN TRADAIR CORP., SUB OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Island City 6, N.Y. ADV. PG. 186
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
ATOMIC ACCESSORIES, INC., 244—04 Jamaica Ave., Bellrose 26, N. Y. ADV. PG. 247
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Burndept Ltd., West St., Erith, Kent, U. K.
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. AD. PG. 181
Eberline Instrument Corp., P. O. Box 279, Santa Fe, N. M.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
General Radiological, Ltd., 15—18 Clipstone St., London, W. 1, England
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
ISOMET CORP., 118 Union St., Palisades Park, N. J. ADV. PG. 232
ISOTOPE DEVELOPMENTS LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind ADV. PG. 254
LANDSVERK ELECTROMETER CO., 641 Sonora Ave., Glendale 1, Calif. ADV. PG. 209
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NATIONAL RADIAC, INC., 479 Washington St., Newark 2, N. J. ADV. PG. 233
Neutronics Laboratory, Tinley Park, Ill.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Nuclear Development Laboratory, P. O. Box 7034, Kansas City, Mo.
NUCLEAR ENTERPRISES, LTD., 1750 Pembina Highway, Winnipeg, Canada. ADV. PG. 270
Nuclear Enterprises (G.B.) Ltd., Sighthill, Edinburgh, Scotland
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
Reuter-Stokes Electronic Components, Inc., 2149 Hamilton Ave., Cleveland 14, Ohio
Societe D'Applications Industrielles de la Physique (S.I.A.P.), 146, Bd. de Charonne, Paris, France
TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas ADV. PG. 205
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151 152, 157
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
Twentieth Century Electronics Ltd., Centronics Works, King Henry's Drive, New Addington, Surrey, England
U. S. Borax & Chemical Corp., Pacific Coast Borax Co., Div., 50 Rockefeller Plaza, New York 20, N. Y.
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Westinghouse Electric Corp., Electronic Tube Div., Box 284, Elmira, N. Y.
WOOD COUNTER LABORATORY, N., 1525 E. 53rd St., Chicago 15, Ill. ADV. PG. 207

COUNTERS—Probing, Medical

Aeronutronics Systems, Inc., 1234 Air Way, Glendale, Calif.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106.
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
ATOMIC ACCESSORIES, INC., 244—04 Jamaica Ave., Bellrose 26, N. Y. ADV. PG. 247
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67—70
Burndept Ltd., West St., Erith, Kent, U. K.
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
JOHNSTON LABORATORIES INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
LEIGHTON LABS, H. W., York Road & Sunset Lane, Hatboro, Pa. ADV. PG. 221
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass. ADV. PG. 257
MEILLON, INC., GEORGE T., 132 Nassau St., New York 38, N. Y. ADV. PG. 243
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NATIONAL RADIAC, INC., 479 Washington St., Newark 2 N. J. ADV. PG. 233
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Twentieth Century Electronics Ltd., Centronics Works, King Henry's Drive, New Addington, Surrey, England
Western Radiation Lab., 1107 W. 24th St., Los Angeles 7, Calif.
WOOD COUNTER LABORATORY, N., 1525 E. 53rd St., Chicago 15, Ill. ADV. PG. 207

COUNTERS—Proportional

AEG—ABT—KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67—70
Bowmar Instrument Corp., 8000 Bluffton Rd., Fort Wayne, Ind.
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
Eberline Instrument Corp., P. O. Box 279, Santa Fe, N. M.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston, Ill. ADV. PG. 229
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
General Radiological, Ltd., 15—18 Clipstone St., London, W. 1, England
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
ISOTOPES, INC., 123 Woodland Ave., Westwood, N. J. ADV. PG. 148
OHNSON & ASSOCIATES, INC., WILLAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Mullard Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Nuclear Development Laboratory, P. O. Box 7034, Kansas City, Mo.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247

NUCLEAR AND ALLIED PRODUCTS — DATA PROCESSING EQUIPMENT

PACKARD INSTRUMENT CO., INC., P. O. Box 428, La Grange, Ill. ADV. PG. 82
Philips Electronics, Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Potter Aeronautical Corp., Route 22, Union, N. J.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB. 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
RADIOCHEMISTRY, INC., 1111 W. St. Catherine St., Louisville 10, Ky. ADV. PG. 242
Societe D'Applications Industrielles de la Physique (S.A.I.P.) 146, Bd. de Charonne, Paris, France
TECHNICAL MEASUREMENT CORP. 441 Washington Ave., North Haven, Conn. ADV. PG. 51
TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas ADV. PG. 205
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Twentieth Century Electronics Ltd. Centronics Works, King Henry's Drive, New Addington, Surrey, England
VICTOREEN INSTRUMENT CO., 5806—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Westinghouse Electric Corp., Electronic Tube Div., Box 284, Elmira, N. Y.
WOOD COUNTER LABORATORY, N., 1525 E. 53rd St., Chicago 15, Ill. ADV. PG. 207

COUNTERS—Pulse

See SCALERS & COUNTERS—Electro-Mechanical

COUNTERS—Rate

See METERS—Count-Rate

COUNTERS—Scintillation

See also SCINTILLATORS—Crystal

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc. 1234 Air Way, Glendale, Calif.
Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Island City 6, N. Y. ADV. PG. 186
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. D. PG. 67—70
BALL BROTHERS RESEARCH CORP., Industrial Park, Boulder, Colo. ADV. PG. 74
Berkeley Crystal Co., 1740 University Ave., Berkeley 3, Calif.
Bews Laboratory, 22 Parker Ave., P. O. Box 478, Trenton 3, N. J.
Bruel & Kjaer, Naerum, Denmark
Burndept Ltd., West St., Erith, Kent, U. K.
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. AD. PG. 181
Devtron Engineering, 1 Winslow St., Redwood Cty, Calif.
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
Eberline Instrument Corp., P. O. Box 279, Santa Fe, N. M.
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Franklin Electronics, Inc., E. Fourth St., Bridgeport, Pa.
General Nuclear Co., 4937 Hollywood Blvd., Hollywood 27, Calif.
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
ISOMET CORP., 118 Union St., Palisades Park, N. J. ADV. PG. 232
ISOTOPE DEVELOPMENTS LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
Measurement Engineering Ltd., Arnprior, Ontario, Canada
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass. ADV. PG. 257
Menlo Research Laboratory, P. O. Box 522, Menlo Park, Calif.
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NATIONAL RADIAC, INC., 479 Washington St., Newark 2, N. J. ADV. PG. 233
NUCLEAR-CHICAGO, 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Nuclear Enterprises (G.B.) Ltd., Sighthill, Edinburgh, Scotland
NUCLEAR ENTERPRISES, LTD., 1750 Pembina Highway, Winnipeg, Canada ADV. PG. 270
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications Ltd., Emafco House, Bell St., Reigate (Surrey), England
Nuclear Research Corp., Southampton, Pa.
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
PACKARD INSTRUMENT CO., INC., P. O. Box 428, La Grange, Ill. ADV. PG. 82
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
Philips Electronics, Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35
Precison Radiation Instruments, Inc., 5810 S. Normandie, Los Angeles 44, Calif.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halstead St., Chicago 21, Ill. ADV. PG. 271
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 194
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
Twentieth Century Electronics Ltd., Centronics Works, New Addington, Croydon, Surrey, England
U. S. Borax & Chemical Corp., Pacific Coast Borax Co., Div., 50 Rockefeller Plaza, New York 20, N. Y.
UNIVERSAL ATOMICS, DIV. OF UNIVERSAL TRANSISTOR PRODUCTS CORP., 17 Brooklyn Ave., Westbury, N. Y. ADV. PG. 194
VICTOREEN INSTRUMENT CO., 5806—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Western Radiation Lab., 1107 W. 24th St., Los Angeles 7, Calif.
WOOD COUNTER LABORATORY, N., 1525 E. 53rd St., Chicago 15, Ill. ADV. PG. 207
X-Ray Dept. of General Electric Co., 4855 Electric Ave., Milwaukee, Wis.

COUNTERS—X-Ray

Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
General Radiological, Ltd., 15—18 Clipstone St., London, W. 1, England
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
ISOTOPE DEVELOPMENTS LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
LANDSVERK ELECTROMETER CO., 641 Sonora Ave., Glendale 1, Calif. ADV. PG. 209
MEILLON, INC., GEORGE T., 132 Nassau St., New York 38, N. Y. ADV. PG. 243
Mullard Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
NATIONAL RADIAC, INC., 479 Washington St., Newark 2, N. J. ADV. PG. 233
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
Nuclear Development Laboratory, P. O. Box 7034, Kansas City, Mo.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Philips Electronics Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Societe D'Applications Industrielles de la Physique (S. A. I. P.), 146, Bd. de Charenne, Paris, France
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Twentieth Century Electronics Ltd., Centronics Works, King Henry's Drive, New Addington, Surrey, England
UNIVERSAL ATOMICS, DIV. OF UNIVERSAL TRANSISTOR PRODUCTS CORP., 17 Brooklyn Ave., Westbury, N. Y. ADV. PG. 194
Veeder-Root, Inc., 70 Sargeant St., Hartford 2, Conn.
WOOD COUNTER LABORATORY, N., 1525 E. 53rd St. Chicago 15, Ill. ADV. PG. 207
X-Ray Dept. of General Electric Co. 4855 Electric Ave., Milwaukee, Wis.

COUNTING RATE METERS

See METERS—Count—Rate

COUPLINGS—Flexible

Aeroquip Corp., Jackson, Mich.
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Aluminum Co. of America, Alcoa Bldg., Pittsburgh 19, Pa.
Chicago Gasket Co., 1271 W. North Ave., Chicago 22, Ill.
COLE ELECTRIC CO., 8439 Stellar Drive, Culver City, Calif. ADV. PG. 193
Continental-Diamond Fibre Corp., Newark, Delaware
Croll-Reynolds Engineering Co., 17 John St., New York 38, N. Y.
Johnson Co., E. F., Waseca, Minn.
Kupfrian Mfg. Co., 350 State St., Binghamton, N. Y.
Lord Mfg. Co., 1635 W. 12th St., Erie, Pa.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Millen Mfg. Co. James, 150 Exchange St., Malden, Mass.
On Mark Couplings, 4440 York Blvd., Los Angeles 41, Calif.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
U. S. Gasket Co., Plastics Div. of The Garlock Packing Co., 600 N. 10th St., Camden 1, N. J.
White Dental Mfg. Co., S. S., 10 E. 40th St., New York 1, N. Y.

CRANES

Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Babcock & Wilcox Ltd., Babcock House 209 Eustron Rd., London N. W. 1, England
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
Robbins & Myers, Inc., 1345 Lagonda Ave., Springfield, Ohio
Standard Railway Equipment Mfg. Co., 200 S. Michigan Ave., Chicago 4, Ill.
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
Wright Hoist Div., American Chain & Cable Co., Inc., 735 Hay St., York, Pa.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

CRITICAL ASSEMBLIES

See REACTORS

CRITICALITY HAZARD EVALUATION

See SERIVCES

CRYOGENIC APPARATUS

Cambridge Corp., 2 Industrial Park, Lowell, Mass.
COSMIC INSTRUMENTS, INC., 50 Broadway, New York 4, N. Y. ADV. PG. 251
HOFMAN LABORATORIES INC., Evans Terminal, Hillside, N. J. ADV. PG. 34
Perkin-Elmer Corp., Main Ave., Norwalk, Conn.
Little, Inc., Arthur D., 30 Memorial Drive, Cambridge 42 Mass.
Sunstrand-Turbo Div. of Sunstrand Machine Tool, Pacoima, Calif.

CRYSTALS—Scintillation

See SCINTILLATORS—Crystal

CYCLOTRONS

See ACCELERATORS

DATA PROCESSING EQUIPMENT

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Airpax Products Co., Seminole Div., Fort Lauderdale, Fla.
Alden Electronic & Impulse Recording Equipment Co., Westboro, Mass.
Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG 81
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Beleck Instrument Corp., 111-01 14th Ave., College Point, N. Y.
BENDIX AVIATION CORP., COMPUTER DIV., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Burke & James, Inc., 321 S. Wabash, Chicago, Ill.
CGS Laboratories, Inc., Ridgefield, Conn.

Colorado Research Corp., Bloomfield Heights, Colo.
Computer Control Co., Inc., 92 Broad St., Babson Park, Wellesley 57, Mass.
Consolidated Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. **ADV. PG. 57**
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. **AD. PG. 149**
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Cubic Corp., 5575 Kearny Villa Rd., San Diego, 11, Calif.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. **ADV. PG. 220**
Data Control Systems, Inc., 39 Rose St., Danbury, Conn.
Datamatic Corp., 151 Needham St., Newton Highlands 61, Mass.
DI-AN Controls, Inc., 40 Leon St., Boston 15, Mass.
ELDORADO ELECTRONICS CO., 2821 10th St., Berkeley, Calif. **ADV. PG. 232**
Electro Data Div. of Burroughs Corp., 460 Sierra Madre Villa, Pasadena, Calif.
Electronic Associates, Inc., Long Branch, N. J.
Electronic Engineering Co. of California, 1601 E. Chestnut St., Santa Ana, Calif.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
El-Tronics, Inc., Suburban Station Bldg., Philadelphia, Pa.
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England **ADV. PG. 236**
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N. Y.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
FORD INSTRUMENT CO., DIV. OF SPERRY-RAND CORP., 31—10 Thomson Ave., Long Island City 1, N. Y. **ADV. PG. 183**
Franklin Electronics, Inc., E. Fourth St., Bridgeport, Pa.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Hansen-Gorrill-Brian, Inc., 85 Hazel St., Glen Cove, N. Y.
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Industrial Nucleonics Corp., 1205 Chesapeake Ave., Columbus 12, Ohio
Industrial Timer Corp., 1407 McCarter Highway, Newark 4, N. J.
Itek Corp., 1605 Tranelo Rd., Waltham 54, Mass.
Kearfott Co., Inc., Engineering & Sales Div., 1378 Main Ave., Clifton, N. J.
Kellogg Switchboard & Supply Co., IT&T Div., 6650 S. Cicero Ave., Chicago 38, Ill.
Kin Tel, 5725 Kearny Villa Rd., San Diego 11, Calif.
Laboratory for Electronics, Inc., 75 Pitts St., Boston 14, Mass.
Leach Corp., 18435 Susana Rd., Compton, Calif.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. **ADV. PG. 246**
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Magnetics Research Co., Inc., 255 Grove St., White Plains, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass. **ADV. PG. 257**
Minneapolis-Honeywell Regulator Co., 10721 Hanna St., Beltsville, Md.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Minnesota Mining & Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.
Mullard Equipment Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
Navigation Computer Corp., 1621 Snyder Ave., Philadelphia 45, Pa.
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. **ADV. PG. 29**
Radiation, Inc. P O Box 37, Melbourne, Fla.
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. **ADV. PG. 271**
Radio Corporation of America, Industrial Electronic Products Div., Camden 2, N. J.
Rank Cintel Ltd., Worsley Bridge Rd., London, S. E. 26, England
Ransom Research, P. O. Box 269, San Pedro, Calif.
Reeves Instrument Corp., Roosevelt Field, Garden City, N. Y.
Remington Rand Div. of Sperry Rand Corp., 315 Fourth Ave., New York 10, N. Y.
Sangamo Electric Co., Electronics Div., Springfield, Ill.
Sperry Gyroscope Div. of Sperry-Rand Corp., Great Neck, N. Y.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Sylvania Electronic Systems Div. of Sylvania Electric Products Inc., 100 First Ave., Waltham 54, Mass.
Taller Copper, Inc., 75 Front St, Brooklyn, N Y.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Tele-Dynamics, Inc., 5000 Parkside Ave., Philadelphia 3, Pa.
Thompson-Ramo-Wooldridge Co., The, P. O. Box 45067, Airport Station, Los Angeles 45, Calif.
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Wang Laboratories, Inc., 37 Hurley St., Cambridge 41, Mass.

DEAERATORS

ALCO PRODUCTS, INC., Schenectady 5, N. Y. **ADV. PG 179**
Consolidated Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Elgin Softener Corp., 179 S. Grove Ave., Elgin, Ill.
Graver Water Conditoner Co., 216 W. 14th St., New York 11, N. Y.
Infilco, Inc., P. O. Box 5033, Tucson, Ariz.
Kinney Mfg. Div., The New York Air Brake Co., 3529 Washington St., Boston 30, Mass.
NARDA ULTRASONICS CORP., Dept. NBG, 625 Main St., Westbury, N. Y. **ADV. PG. 113**
Permutit Co., 50 W. 44th St., New York 36, N. Y.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
Robbins Aviation, Inc., 2350 E. 38th St., Los Angeles 58, Calif.
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
Willamette Iron & Steel Co., 2800 N. W. Front Ave., Portland 10, Ore.
Worthington Corp., Harrison, N. J.

DECONTAMINANTS

ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. **ADV. PG. 237**
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Dow Chemical Co., Midland, Mich.
Geigy Industrial Chemicals, Sawmill River Rd., Ardsley, N. Y.
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. **ADV. PG. 247**
Turco Products, Inc., 6135 S. Central Ave., Los Angeles 1, Calif.

DECONTAMINATING EQUIPMENT

Acoustica Associates, Inc., 26 Windsor Rd., Mineola, N. Y.
AMERICAN LAUNDRY MACHINERY CO., Norwood 12, Ohio **ADV. PG. 224**
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. **ADV. PG. 144, 145**
Consolidated Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Ionics, Inc., 152 6th St., Cambridge 42, Mass.
McKenna Laboratories, 2503 Main St., Santa Monica, Calif.
Measurement Engneering, Ltd., Arnprior, Ontario, Canada
Mullard Equipment Ltd., Mullard House, Torrington Pl. London W. C. 1, England
NARDA ULTRASONICS CORP., Dept. NBG, 625 Main St., Westbury, N. Y. **ADV. PG. 113**
New Jersey Safety Equipment Co., Park Ave. at Garden State Pkwy., East Orange, N. J.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany **ADV. PG. 63**
Turco Products, Inc., 6135 S. Central Ave., Los Angeles 1, Calif.

DECONTAMINATON

See SERIVCES

DEHUMIDIFIERS

Abbeon Supply Co., 179—15 Jamaica Ave., Jamaica 32, N. Y.
Air & Refrigeration Corp., 439 Madison Ave., New York 17, N. Y.
American Blower Div., American Radiator & Standard Corp., 8111 Tireman Ave., Dearborn, Mich.
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Clarage Fan Co., 719 Porter St., Kalamazoo, Mich.
Controlled Atmosphere Enclosure Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Ellis and Watts Products, Inc., Monroe at Spencer, Cincinnati 36 (Rossmoyne), Ohio
Foote Mineral Co., 18 W. Chelten Ave., Philadelphia 44, Pa.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Monsanto Chemical Co., Plastics Div., 600 Monsanto Ave., Springfield 2, Mass.
Murphy & Miller Inc., 624 W. Taylor St., Chicago 7, Ill.
Pittsburgh Lectrodryer Div. of McGraw-Edison Co., 300 32nd St., Pittsburgh 30, Pa.
Remington Air Conditioning Div. of Remington Corp., Willey St., Auburn, N. Y.
Robbins Aviation, Inc., 2350 E. 38th St., Los Angeles 58, Calif.
Selas Corp. of America, Dresher, Pa.
Surface Combustion Corp., 2375 Dorr St., Toledo 1, Ohio
Trinity Equipment Corp., P. O. Box 1172, Cortland, N. Y.
York Corp., York, Pa.

DEIONIZATION APPARATUS

See WATER CONDITIONERS

DE-IONIZERS

See DEMINERALIZERS

DELAY LINES

Admiral Corp., 3800 W. Cortland St., Chicago 47, Ill.
Alden Products Co., 118D N. Main St., Brockton, Mass.
Andersen Laboratories, Inc., 501 New Park Ave., West Hartford 10, Conn.
Arenberg Ultrasonic Lab. Inc., 94 Green St., Jamaica Plain 30, Mass.
Barker & Williamson, Inc., Canal & Beaver, Bristol, Pa.
Brew & Co., Inc., Richard D., Airport Rd., Box 339, Concord, N. H.
Cambridge Thermionic Corp., 445 Concord Ave., Cambridge 38, Mass.
Columbia Technical Corp., 61—02 31st Ave., Woodside 77, N. Y.
Constantine Engineering Laboratories Co., 70 Island Ave., Mahwah, N. J.
CORNING GLASS WORKS, Corning, N. Y. **ADV. PG. 219**
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. **ADV. PG. 220**
Daven Co., Route 10 Livingston, N. J.
Deltime, Inc., 608 Fayette Ave., Mamaroneck, N. Y.
DI-AN Controls Inc., 40 Leon St., Boston 15, Mass.
E.M.I. ELECTRONICS LTD. Hayes, Middlesex, England **ADV. PG. 236**
E S C Corp., 534 Bergen Blvd., Palisades Park, N. J.
Electrical & Physical Instrument Corp., 42—19 27th St., Long Island City 1, N. Y.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N. Y.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
Gudeman Co., 340 W. Huron St., Chicago 10, Ill.
Laboratory for Electronics, Inc., 75 Pitts St., Boston 14, Mass.
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.
Mullard Equipment Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey), England
PCA Electronics, Inc., 16799 Schoenborn St., Sepulveda, Calif.
Polyphase Instrument Co., East 4th St., Bridgeport, Pa.
Pulse Engineering, 2657 Spring St., Redwood City, Calif.
Quartz Products Corp., 688 Somerse St., Plainfield, N. J.
Quartz & Silice, 8 rue d'Anjou, Paris, France
Rank Cintel Ltd., Worsley Bridge Rd., London, S. E. 26, England
Redman Electronics Corp., P. O. Box 72, Thompsonville, Conn.
Sangamo Electric Co., Electronics Div., Springfield, Ill.
Sealtron Corp., Reading Rd. at Amity, Cincinnati 15, Ohio
Shallcross Mfg. Co., Selma, N. C.
Sickles Div., F. W., General Instrument Corp., 165 Front St., Chicopee, Mass.
Technitrol Engineering Corp., Emerald St. & Allegheny Ave., Philadelphia 34, Pa.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
TOBE DEUTSCHMANN CORP., Providence Highway, Norwood, Mass. **ADV. PG. 214**
Transonic, Inc., 808 16th St., Box 59, Bakersfield, Calif.
Tronex, Inc., 10th & G Sts. Milville N. J.
United Transformer Corp., 150 Varick St., New York 13, N. Y.
Wheeler Electronic Corp., Sub. of Sperry Rand Corp., 150 E. Aurora St., Waterbury 20, Conn.

DEMINERALIZERS

See also WATER Conditioners
ALCO PRODUCTS, INC., Schenectady 5, N. Y. **ADV. PG. 179**
BARNSTEAD STILL & STERILIZER CO., 84 Lanesville Terrace, Boston 31, Mass. **ADV. PG. 227**
Bio-Rad Laboratories, 1257 S. 32nd St., Richmond, Calif.
Chem-Pure Service Co., 762 Industrial Rd., San Carlos, Calif.

Consolidated Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Elgin Softener Corp., 179 S. Grove Ave., Elgin, Ill.
Graver Water Conditioner Co., 216 W. 14th St., New York 11, N. Y.
Illinois Water Treatment Co., 840 Cedar St., Rockford, Ill.
Infilco, Inc., P. O. Box 5033, Tucson, Ariz.
Ionics, Inc., 152 6th St. Cambridge 42, Mass.
La Motte Chemical Products Co. Chestertown, Md.
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Penfield Mfg. Co., Inc., 19 High School Ave., Meriden, Conn.
Permutit Co., 50 W. 44th St., New York 36, N. Y.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
Rohm & Haas Co., Washington Square, Philadelphia 5, Pa.
Scientific Equipment Co., Box 5686, Indianapolis 19, Ind.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.

DENSITOMETERS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
Applied Research Labs., Inc., P. O. Box 1710, Glendale 5, Calif.
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Eastman Kodak Co., 343 State St., Rochester 4, N. Y.
Eberline Instrument Corp., P. O. Box 279, Santa Fe, N. M.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Falk & Co., Ltd., M., Emefco House Bell St. Reigate (Surrey) England
Gaertner Scientific Corp., 1237 Wrightwood Ave., Chicago, Ill.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
Kaman Aircraft Corp. 2013 Ridgecrest Drive, S. E., Albuquerque, N. M.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Macbeth Instrument Corp., Little Britain Rd., Newburgh, N. Y.
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
Phoenix Precision Instrument Co., 3803—05 N. Fifth St., Philadelphia, Pa.
Photovolt Corp., 95 Madison Ave., New York 16, N. Y.
Potter Aeronautical Corp., Route 22, Union, N. J.
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.

DESICCATORS

City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Consolidated Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
Monsanto Chemical Co., Plastics Div., 600 Monsanto Ave., Springfield 2, Mass
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Robbins Aviation, Inc., 2350 E. 38th St., Los Angeles 58, Calif.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England

DESIGN, ENGINEERING & CONSTRUCTION

See SERVICES—Engineering & Construction

DETECTORS

See also COUNTERS

DETECTORS—Burst—Slug

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
ANTON ELECTRONIC LABS., INC., 1226-38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
Consolidated Controls Corp., Durant Ave., Bethel, Conn.
Elliott Brothers (London) Ltd., Lewisham Century Works, Londn, S.E. 13, England
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W.C. 2
Omega Engineering Co., 70 E. 45th St., New York 17, N. Y.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W.C. 2, England
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

DETECTORS—Gas

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67—70
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
GELMAN INSTRUMENT CO., Chelsea, Mich. ADV. PG. 239
General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50, Pa.
Gow-Mac Instrument Co., 100 Kings Rd., Madison, N. J.
Heath Co., Benton Harbor, Mich.
Hunter-Bristol Div., Thiokol Chemical Corp., Bristol, Pa.
Johnson-Williams, Inc., 2625 Park Blvd., Palo Alto 95, Calif.
Kruger Instruments, Harold, P. O. Box 164, San Gabriel, Calif.
Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.
New Jersey Safety Equipment Co., Park Ave. at Garden State Pkwy., East Orange, N. J.
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Resitron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
Specialty Engineering & Electronics Co., 79 Clifton Place, Brooklyn 38, N. Y.
Taller & Cooper Inc., 75 Front St., Brooklyn, N. Y.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10

DETECTORS—Leak

ACF INDUSTRIES, INC., NUCLEAR PRODUCTS—ERCO DIV, 508 Kennedy St., N.W., Washington 11, D. C. ADV. PG. 43
AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Beckman/Scientific & Process Instruments Div., Beckman Instruments, Inc., 2500 Fullerton Rd., Fullerton, Calif
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S.E. 13, England
Gates & Co., Inc., George W., Hempstead Turnpike & Lucille Ave., Franklin Square, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Highside Chemicals, Inc., 4—10 Colfax Ave., Clifton, N. J.
Kahn & Co. Inc., 941 Windsor St., Hartford 1, Conn.
LIQUID METALS, INC., Box 266, Westford, Mass. ADV. PG. 233
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Menlo Research Laboratory, P. O. Box 522, Menlo Park, Calif.
Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.
NRC EQUIPMENT CORP., A SUB. OF NATIONAL RESEARCH CORP., 88 Charlemont St., Newton Highlands 61, Mass. ADV. PG. 159
National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.
New Jersey Safety Equipment Co., Park Ave. at Garden State Pkwy. East Orange, N. J.
NUCLIDE ANALYSIS ASSOCIATES, P. O. Box 752, State College, Pa ADV. PG. 257
Potter Aeronautical Corp., Route 22, Union, N. J.
RADIATION APPICATIONS INC., 370 Lexington Ave., Newm York 17, N. Y. ADV. PG. 238
STOKES CORP., F. J., 5500 Tabor Rd., Philadelphia 20, Pa. ADV. PG. 268
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Twentieth Century Electronics Ltd., Centronics Works, King Henry's Drive, New Addington, Surrey, England
Vacuum Industrial Applications, Ltd., Netherton Rd., Wishaw, Lanarkshire, Scotland
Veeco Vacuum Corp., 86 Denton Ave., New Hyde Park, N. Y.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10

DETECTORS—Metal

ALLIS-CHALMERS MFG., CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
Dice Co., J. W., Englewood 41, N. J.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Potter Aeronautical Corp., Route 22, Union, N. J.
Rank Cintel Ltd., Worsley Bridge Rd., London, S.E. 26, England
Stoelting Co., C. H., 424 N. Homan Ave., Chicago 24, Ill.

DETECTORS—Radiation

See CHAMBERS—Ionization
COUNTERS
DOSIMETERS
G-M TUBES
METALS—Foil
SCINTILLATORS—Crystal

DETECTORS—Vacuum

See CONTROLS—Vacuum

DETERGENTS

See DECONTAMINATES

DIODES—Semiconductor

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Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Amperex Electronic Corp., 230 Duffy Ave., Hicksville, N. Y.
Ballcu & Co., Inc., B. A., 61 Peck St., Providence, R. I.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bomac Laboratories, Inc., Salem Rd., Beverly, Mass.
Bradley Laboratories, Inc., 168 Columbus Ave., New Haven 11 Conn.
CBS-Hytron, A Div. of Columbia Broadcasting System, Inc., 100 Endicott St., Danvers, Mass.
Clevite Transistor Products, A Div. of The Clevite Corp., 241—257 Crescent St., Waltham 54, Mass.
Erie Resistor Corp., 639 W. 12th St., Erie, Pa.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
FANSTEEL METALLURGICAL CORP., North Chicago, Ill. ADV. PG. 172
General Electric Co., Semiconductor Products Dept., Electronics Park, Syracuse, N. Y.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
GENERAL TRANSISTOR CORP., 91—27 138th Place, Jamaica 35, N. Y. ADV. PG. 165
Hughes Products, Airport Station, Los Angeles 45, Calif.
International Rectifier Corp., 1521 E. Grand Ave., El Segundo, Calif.
Mallory & Co., Inc., P. R., 58 S. Gray St., Indianapolis 6, Ind.
Microwave Associates, Inc., Burlington, Mass.
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
Motorola, Inc., Semiconductor Products Div., 5005 E. McDowell Rd., Phoenix, Ariz.
Mullard Ltd., Mullard House, Torrington Pl., London, W. C. 1 England
Ohmite Mfg. Co., 3601 Howard St., Skokie, Ill.
Pacific Semiconductors, Inc., 10451 W. Jefferson Blvd., Culver City, Calif.
Philco Corp., Lansdale Tube Co. Lansdale, Pa.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
RADIO CORPORATION OF AMERICA, TUBE DIV., 415 S. Fifth St., Harrison, N. J. ADV. PG. 170
Raytheon Mfg. Co., Semiconductor Div., 215 First Ave., Needham Heights, Mass.
Sperry Gyroscope Div. of Sperry-Rand Corp., Great Neck, N. Y.
Sylvania Electric Products Inc., Semiconductor Div., Woburn, Mass.
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas
Transitron Electronics Corp., 168 Albion St., Wakefield, Mass.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10

DISSOLVERS

ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85

Blaw-Knox Co., 300 Sixth Ave., N.B., Pittsburgh 22, Pa.
Knight Co., Maurice A., 171 Kelly Ave., Akron, Ohio

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Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
Blaw-Knox Co., 300 Sixth Ave., N.B., Pittsburgh 22, Pa.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Chicago Steel Tank Co., 6400 W. 66th St., Chicago, Ill.
Condenser Service & Engineering Co., Inc., 150 Observer Highway, Hoboken, N. J.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG 219
Custom Lubricant Co., 743 Dwight Way, Berkeley 10, Calif.
Eberbach Corp., Ann Arbor, Mich.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
Gallenkamp & Co., Ltd., A., Sun St., London E.C. 2, England
Glass Engineering Laboratories, 601 O'Neil Ave., Belmont, Calif.
GRAVER TANK & MFG. CO., INC., 4809 Tod Ave., East Chicago, Ind. ADV. PG. 195
GRISCOM-RUSSELL CO., SUB. OF GENERAL PRECISION EQUIPMENT CORP., Massillon, Ohio ADV. PG. 98
Kontes Glass Co., Dept. P-159, Vineland, N. J.
Koven Fabricators, Inc., 90 E. Dickerson St., Dover, N. J.
Maxim Silencer Co. The, Homestead Ave., Hartford, Conn.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Pfaudler Co., The, A Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
STOKES CORP., F. J., 5500 Tabor Rd., Philadelphia 20, Pa. ADV. PG. 268
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AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
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BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103.
Consolidated Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
Edlow Lead Co., 729 Bank St., Columbus 16, Ohio
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Farrel-Birmingham Co., Inc., Ansonia, Conn.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Lead Construction Corp., 1800 Harrison Ave., Kearny, N. J.
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Peele Co., The, 47 Stewart Ave., Brooklyn 37, N. Y.
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Standard Railway Equipment Mfg. Co. 200 S. Michigan Ave., Chicago 4, Ill.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Willamette Iron & Steel Co., 2800 N. W. Front Ave., Portland 10, Ore.

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See CHAMBERS—Ionization COUNTERS

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Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. AD. PG. 58
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184

DOSIMETERS—Crystal

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ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Bausch & Lomb Optical Co., 630 St. Paul St., Rochester 2, N. Y.
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV PG. 254
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France

DOSIMETERS—Film Badge

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
Eastman Kodak Co., 343 State St., Rochester 4, N. Y.
HEALTH PHYSICS SERVICES, INC., 1111 Low St., Baltimore 2, Md ADV. PG. 221
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV PG. 158, 229
LANDAUER, JR., & CO., R. S., 3920 216th St., Matteson, Ill. ADV. PG. 235
MEILLON INC., GEORGE T., 132 Nassau St., New York 38, N. Y. ADV. PG. 243
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Nuclear Service Laboratory, P. O. Box 1885, Knoxville 1, Tenn.
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Photovolt Corp., 95 Madison Ave., New York 16, N. Y.
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35
Radiation Detection Co., 4047—49 Transport St., Palo Alto, Calif.
St. John X-Ray Laboratory, Califon, N. J.
Samples Machine Co., A. M., 2908 Tazewell Pike, Knoxville, Tenn.
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Volk Radiochemical Co., 5412 N. Clark St., Chicago 40, Ill.
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.
X-Ray Monitoring Corp., 1947 Broadway, New York 23, N. Y.

DOSIMETERS—G-M

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
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ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG 106
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
LANDSVERK ELECTROMETER CO., 641 Sonora Ave., Glendale 1, Calif. ADV. PG. 209
MEILLON INC., GEORGE T., 132 Nassau St., New York 38, N. Y. ADV. PG. 243
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago 10, Ill. ADV. PG. 91
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France

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Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Bausch & Lomb Optical Co., 630 St. Paul St., Rochester, N. Y.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Fish-Schurman Corp., 75 Portman Rd., New Rochelle, N. Y.
Pacific Transducer Corp., 11836 SW Pico Blvd., Los Angeles 64, Calif.
PENBERTHY INSTRUMENT CO., HI-D DIV., 4301 6th Ave., S., Seattle 8, Wash. ADV. PG. 215
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
Specialty Engineering & Electronics Co., 79 Clifton Place, Brooklyn 38, N. Y.

DOSIMETERS—Ion Chamber

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Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
ANTON ELECTRONIC LABS. INC., 1226-38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMIC ACCESSORIES INC., 244-04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
Baldwin Instrument Co., Ltd., Brookland Works, Dartford, Kent, England
COSMIC INSTRUMENTS, INC., 50 Broadway, New York 4, N. Y. ADV. PG. 251
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Jordan Electronics, A Div. of The Victoreen Instrument Co., 3025 W. Mission Rd., Alhambra, Calif.
LANDSVERK ELECTROMETER CO., 641 Sonora Ave., Glendale 1, Calif. ADV. PG. 209
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
MASSIOT & CO., G., 37 bis Rue de Belfort, Courbevoie, Seine France ADV. PG. 251
MEILLON, INC., GEORGE T., 132 Nassau St., New York 38 N. Y. ADV. PG. 243
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NUCLEAR-CHICAGO CORP., 229 Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 1, N. Y.
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Philips Electronics, Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhaven, Holland. ADV. PG. 86
Rank Cintel Ltd., Worsley Bridge Rd., London S. E. 26, England

TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas. ADV. PG. 205
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
VICTOREEN INSTRUMENT CO., 5800-11 Hough Ave., Cleveland 3, Ohio. ADV. PG. 196, 202, 203
Volk Radiochemical Co., 5412 N. Clark St., Chicago 40, Ill.

DOSIMETERS—Pocket

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Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
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ATOMIC ACCESSORIES INC., 244—04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
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BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
CAMBRIDGE INSTRUMENT CO., INC., 3107 Grand Central Terminal, New York 17, N. Y. ADV. PG. 237
COSMIC INSTRUMENTS, INC., 50 Broadway, New York 4, N. Y. ADV. PG. 251
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ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
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Jordan Electronics a Div. of the Victoreen Instrument Co., 3025 W. Mission Rd., Alhambra, Calif.
LANDSVERK ELECTROMETER CO., 641 Sonora Ave., Glendale 1, Calif. ADV. PG. 209
MASSIOT & CO., G., 37 bis Rue de Belfort, Courbevoie, Seine France ADV. PG. 251
MEILLON INC., GEORGE T., 132 Nassau St., New York 38, N. Y. ADV. PG. 243
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago 10, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey) England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Philips Electronics, Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven Holland. ADV. PG. 86
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
Rank Cintel Ltd., Worsley Bridge Rd., London, S.E. 26, England
Stephen & Co., Ltd., R. A., 120—126 Lavender Ave., Mitcham, Surrey, England
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
UNIVERSAL ATOMICS, DIV. OF UNIVERSAL TRANSISTOR PRODUCTS CORP., 17 Brooklyn Ave., Westbury, N. Y. AD. PG. 194
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Volk Radiochemical Co., 5412 N. Clark St., Chicago 40, Ill.
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X-Ray Dept. of General Electric Co., 4855 Electric Ave., Milwaukee, Wis.

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Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Custom Lubricant Co., 743 Dwight Way, Berkeley 10, Calif.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
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Blaw-Knox Co., 300 Sixth Ave., N.B., Pittsburgh 22, Pa.
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Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
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Huppert Co., K. H., 6830 S. Cottage Grove Ave., Chicago 7, Ill.
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LaPine & Co., Arthur S., 6001 S. Knox Ave., Chicago 29, Ill.
Lennard Co., Inc., P.M., 1061 E. 8th St., Jacksonville 6, Fla.
NRC EQUIPMENT CORP., A SUB. OF NATIONAL RESEARCH CORP., 88 Charlemont St., Newton Highlands 61, Mass. ADV. PG. 159
National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.
Niagara Filters Div. & Tolhurst Centrifugals Div., American Machine & Metals, Inc., East Moline, Ill.
Pfaudler Co., The, A Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
STOKES CORP., F. J., 5500 Tabor Rd., Philadelphia 20, Pa. ADV. PG 268
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England
Vacuum Industrial Applications Ltd., Netherton Rd., Wishaw, Lanarkshire, Scotland
Vacuum Specialties Co., Inc., 34 Linden St., Somerville 2, Mass.

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Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34-01 30th St., Long Island City 6, N. Y. ADV. PG. 186
APPLIED PHYSICS CORP., 2724 S. Peck Rd., Monrovia, Calif. ADV. PG. 210
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. G. 100, 101
Atomic Laboratories, Berkeley, Calif.
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
CAMBRIDGE INSTRUMENT CO., INC., 3107 Grand Central Terminal, New York 17, N. Y. ADV. PG. 237
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Ericssons Telephones, Ltd., Instrument Div., High Church St., New Basford, Nottingham, England
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV PG. 254
KEITHLEY INSTRUMENTS, INC., 12415 Euclid Ave., Cleveland 6, Ohio. ADV. PG. 104
LANDSVERK ELECTROMETER CO., 641 Sonora Ave., Glendale 1, Calif. ADV. PG. 209
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Neutronics Laboratory, Tinley Park, Ill.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Specialty Engineering & Electronics Co., 79 Clifton Place, Brooklyn 38, N. Y.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
VICTOREEN INSTRUMENT CO., 5800-11 Hough Ave., Cleveland 3, Ohio AD. PG. 196, 202, 203

EVAPORATORS

ALCO PRODUCTS, INC., Schenectady 5, N. Y. AD. PG. 179
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Dunham-Bush, Inc., 179 South St., West Hartford 10, Conn.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
GRISCOM-RUSSELL CO., SUB. OF GENERAL PRECISION EQUIPMENT CORP., Massillon, Ohio. ADV. PG. 98
INSTRUMENTATION ASSOCIATES, 17 W. 60th St., New York 23, N. Y. ADV. PG. 229
Kearney Industries, Delanium Graphite Div., 134 Elmora Ave., Elizabeth, N. J.
Maxim Silencer Co., The, Homestead Ave., Hartford, Conn.
Modine Mfg. Co., 1603 De Koven Ave., Racine, Wis.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany. ADV. PG. 63
Smith Corp., A. O., 3533 N. 27th St., Milwaukee 1, Wis.
Struthers-Wells Corp., Warren, Pa.
Vacuum Industrial Applications, Ltd., Netherton Rd., Wishaw, Lanarkshire, Scotland
Worthington Corp., Harrison, N. J.
York Corp., York, Pa.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

EXPANSION JOINTS

See BELLOWS & EXPANSION JOINTS

EXPONENTIAL PILE

See REACTORS

FANS

See BLOWERS

FILM BADGE SERVICES

See SERVICES

FILM BADGES

See DOSIMETERS—Film Badge

FILTERS—Air

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Adams Co., Inc., R. P., E. Park Drive, Buffalo 17, N. Y.
Air-Maze Corp., 25000 Miles Rd., Cleveland, Ohio
Air & Refrigeration Corp., 439 Madison Ave., New York 17, N. Y.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
American Air Filter Co., 215 Central Ave., Louisville 8, Ky.
American Blower Div., American Radiator & Standard Corp., 8111 Tireman Ave., Dearborn, Mich.
BARNSTEAD STILL & STERILIZER CO., 84 Lanesville Terrace, Boston 31, Mass. ADV. PG. 227
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
CAMBRIDGE FILTER CORP., 726 Erie Blvd., East, Syracuse 1, N. Y. ADV. PG. 199
Commercial Filters Corp., 2 Main St., Melrose 76, Mass.
Conoflow Corp., 2100 Arch St., Philadelphia 3, Pa.
Continental Air Filters, Inc., 2520 Heim St., Louisville, Ky.
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Coppus Engineering Corp., 334 Park Ave., Worcester, Mass.
Cuno Engineering Corp., 80 S. Vine St., Meriden, Conn.
DeVilbiss Co., 300 Phillips Ave., Toledo, Ohio
Drico Industrial Corp., 100 8th St., Passaic, N. J.
FLANDERS FILTERS, INC., Riverhead, N. Y. ADV. PG. 236
GELMAN INSTRUMENT CO., Chelsea, Mich. ADV. PG. 239

Hanna Engineering Works, 1767 N. Elston Ave., Chicago 22, Ill.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Kay & MacDonald, Inc., 11—15 Central Ave., West Orange, N. J.
Leavitt Machine Co., The, 10 E. River St., Orange, Mass.
Lennard Co., Inc., P. M., 1061 E 8th St., Jacksonville, Fla.
Leslie Co., 299 Grant Ave., Lyndhurst, N. J.
Mason-Neilan Nahatan St., Norwood, Mass.
Metal Textile Corp., 647 E. First Ave., Roselle, N. J.
Micro Metallic Corp., 30 Sea Cliff Ave., Glen Cove, N. Y.
Millipore Filter Corp., Bedford, Mass.
Mine Safety Appliances Co., 201 N. Braddock Ave, Pittsburgh 8, Pa.
Norwalk Valve Co., 33 Railroad Ave., South Norwalk Conn.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Pall Filtration Co., 30 Sea Cliff Ave., Glen Cove, N. Y.
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
Plummer, Lawley & Co., 1022 Lancaster Ave., Rosemont, Pa.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
Raytheon Mfg. Co., Nuclear Power Group, 28 Seyon St., Waltham 54, Mass.
Research Products Corp., 1015 E. Washington Ave., Madison, Wis.
Schleicher & Schuell Co., Carl, Keene 8, N. H.
Sethco Mfg. Co., 2293 Babylon Turnpike, Merrick, N. Y.
STAPLEX CO., THE, AIR SAMPLER DIV., 783 Fifth Ave., Brooklyn 32, N. Y. ADV. PG. 234
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Trinity Equipment Corp., P. O. Box 1172, Cortland, N. Y.
Trion, Inc., 1000 Island Ave., McKees Rocks, Pa.
Watts Regulator Co., 10 Embankment St., Lawrence, Mass.

FILTERS—Asbestos

Allied Plastics Supply Corp. 75 Cliff St., New York 38, N. Y.
Condenser Service & Engineering Co., Inc., 150 Observer Highway, Hoboken, N. J.
Croll-Reynolds Engineering Co., 17 John St., New York 38, N. Y.
Ertel Engineering Corp., Kingston 31, N. Y.
FLANDERS FILTERS, INC., Riverhead, N. Y. ADV. PG. 236
GELMAN INSTRUMENT CO., Chelsea, Mich. ADV. PG. 239
Niagara Filters Div., & Tolhurst Centrifugals Div., American Machine & Metals, Inc., East Moline, Ill.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
Sparkler Mfg. Co., Mundelein, Ill.

FILTERS—Ceramic

Acme Brick Co., P. O. Box 425, Fort Worth 1, Texas
Alite Div. of U. S. Stoneware Co., P. O. Box 119, Orville, Ohio
American Air Filter Co., 215 Central Ave., Louisville 8, Ky.
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Croll-Reynolds Engineering Co., 17 John St., New York 38, N. Y.
Du-Co Ceramics Co., Box 587, Butler 8, Pa.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Gladding, McBean & Co., 2901 Los Feliz Blvd., Los Angeles 39, Calif.
Lindberg Engineering Co., 2450 W. Hubbard St., Chicago 12 Ill.
NATIONAL BERYLLIA CORP., 4501 Dell Ave., North Bergen, N. J. ADV. PG. 254
NORTON CO., 1 New Bond St., Worcester 6, Mass. ADV. PG. 77
Selas Corp. of America, Dresher, Pa.
Sethco Mfg. Co., 2293 Babylon Turnpike, Merrick, N. Y.
Sparkler Mfg. Co., Mundelein, Ill.
Star Porcelain Co., The, P. O. Box 1329, Trenton 9, N. J.
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.

FILTERS—Cotton

Commercial Filters Corp., 2 Main St., Melrose 76, Mass.
Niagara Filters Div., & Tolhurst Centrifugals Div., American Machine & Metals, Inc., East Moline, Ill.
Plummer, Lawley & Co., 1022 Lancaster Ave., Rosemont, Pa.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
Sethco Mfg. Co., 2293 Babylon Turnpike, Merrick, N. Y.
Shriver & Co., Inc., T., 864 Hamilton St., Harrison, N. J.
Sparkler Mfg. Co., Mundelein, Ill.

FILTERS—Glass

American Air Filter Co., 215 Central Ave., Louisville 8, Ky.
Bausch & Lomb Opitcal Co., 630 St. Paul St., Rochester 2, N. Y.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Buhl Optical Co., 1009 Beech Ave., Pittsburgh 33, Pa.
Burke & James, Inc., 321 S. Wabash, Chicago, Ill.
Chance-Pilkington Optical Works, Pilkington Brothers, Ltd., St. Asaph, Flintshire, Great Britain
Commercial Filters Corp., 2 Main St., Melrose 76, Mass.
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
Drico Industrial Corp., 100 8th St., Passaic, N. J.
Fish-Schurman Corp., 75 Portman Rd., New Rochelle, N. Y.
GELMAN INSTRUMENT CO., Chelsea, Mich. ADV. PG. 239
Glass Engineering Laboratories, 601 O'Neil Ave., Belmont, Calif.
KOLLMORGEN OPTICAL CORP., 347 King St., Northampton, Mass. ADV. PG. 167
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.
Niagara Filters Div. & Tolhurst Centrifugals Div., American Machine & Metals, Inc., East Moline, Ill.
Pall Filtration Co., 30 Sea Cliff Ave., Glen Cove, N. Y.
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
Plummer, Lawley & Co., 1022 Lancaster Ave., Rosemont, Pa.
Schleicher & Schuell Co., Carl, Keene 8, N. H.
Sethco Mfg. Co., 2293 Babylon Turnpike, Merrick, N. Y.
Sparkler Mfg. Co., Mundelein, Ill.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Tinsley Laboratories, Inc., 2526 Grove St., Berkeley 4, Calif.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England
Zenith Optical Lab., 1940 Great Neck Rd., Copague, N. Y.

FILTERS—Metallic

American Air Filter Co., 215 Central Ave., Louisville 8, Ky.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bishop & Co., J., Platinum Works, Malvern, Pa.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Commercial Filters Corp., 2 Main St., Melrose 72, Mass.
Croll-Reynolds Engineering Co., 17 John St., New York 38, N. Y.
Cuno Engineering Corp., 80 S. Vine St., Meriden, Conn.
Duriron Co., Inc., 450 N. Findlay St., Dayton 4, Ohio
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Fish-Schurman Corp., 75 Portman Rd., New Rochelle, N. Y.
Graver Water Conditioner Co., 216 W. 14th St., New York 11, N. Y.
HOKE, INC., Cresskill, N. J. ADV. PG. 222
Kay & MacDonald, Inc., 11—15 Central Ave., West Orange, N. J.
Leslie Co., 299 Grant Ave., Lyndhurst, N. J.
Marvel Engineering Co., 7227 N. Hamlin Ave., Chicago 45, Ill.
Metal Textile Corp., 647 E. First Ave., Roselle, N. J.
Micro Metallic Corp., 30 Sea Cliff Ave., Glen Cove, N. Y.
Newark Wire Cloth Co., 351 Verona Ave., Newark 4, N. J.
Niagara Filters Div., & Tolhurst Centrifugals Div., American Machine & Metals, Inc., East Moline, Ill.
Pall Filtration Co., 30 Sea Cliff Ave., Glen Cove, N. Y.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
Pyramid Screen Corp., 181 Harvard St., Brookline 46, Boston, Mass.
Sethco Mfg. Co., 2284 Babylon Turnpike, Merrick, N. Y.
Shriver & Co., Inc., T., 864 Hamilton St., Harrison, N. J.
Sparkler Mfg. Co., Mundelein, Ill.
Sperry & Co., D. R., Batavia, Ill.

FILTERS—Paper

Armstrong Cork Co., Lancaster, Pa.
Bruel & Kjaer, Naerum, Denmark
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Commercial Filters Corp., 2 Main St., Melrose 76, Mass.
Eaton-Dikeman Co., Mount Holly Springs, Pa.
Ertel Engineering Corp. Kingston 31, N. Y.
FLANDERS FILTERS, INC., Riverhead, N. Y. ADV. PG. 236
Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.
Niagara Filters Div. & Tolhurst Centrifugals Div., American Machine & Metals, Inc., East Moline, Ill.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Schleicher & Schuell Co., Carl, Keene 8, N. H.
Sethco Mfg. Co., 2293 Babylon Turnpike, Merrick, N. Y.
Sparkler Mfg. Co., Mundelein, Ill.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Will Corporation, Wilco Place, Box 1050, Rochester 3, N. Y.

FILTERS—Plastic

Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Croll-Reynolds Engineering Co., 17 John St., New York 38, N. Y.
Cuno Engineering Corp., 80 S. Vine St., Meriden, Conn.
Emerson Plastics Corp., 1383 Seabury Ave., Bronx 61, N. Y.
Micro Metallic Corp., 30 Sea Cliff Ave., Glen Cove, N. Y.
Millipore Filter Corp., Bedford, Mass.
Pall Filtration Co., 30 Sea Cliff Ave., Glen Cove, N. Y.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
Sethco Mfg. Co., 2293 Babylon Turnpike, Merrick, N. Y.
Shamban & Co., W. S., 11617 W. Jefferson Blvd., Culver City, Calif.
Shriver & Co., Inc., T., 864 Hamilton St., Harrison, N. J.
Sparkler Mfg. Co., Mundelein, Ill.
Sperry & Co., D. R., Batavia, Ill.
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.

FILTERS—RF

Allen-Bradley Co., 136 W Greenfield Ave., Milwaukee 4, Wis.
Andrew Corp., 363 E. 75th St., Chicago 19, Ill.
Astron Corp., 255 Grant Ave., East Newark, N. J.
Bird Electronic Corp., 1800 E. 38th St., Cleveland 14, Ohio.
Cornell-Dubilier Electric Corp., South Plainfield, N. J.
Daven Co., Route 10, Livingston, N. J.
ESC CORP., 534 Bergen Blvd., Palisades Park, N. J.
Hughes Products, Airport Station, Los Angeles 45, Calif.
Hycon Eastern, Inc., 75 Cambridge Parkway, Cambridge 42, Mass.
Ortho Filter Corp., 198 Albion Ave., Paterson 2, N. J.
Spencer-Kennedy Labs, Inc., 1320 Soldiers Field Rd., Boston 35, Mass.
Sprague Electric Co., North Adams, Mass.
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.
TOBE DEUTSCHMANN CORP., Providence Highway, Norwood, Mass. ADV. PG. 214

FILTERS—Radiation

See ABSORBERS—Radiation

FILTERS—Rubber

Commercial Filters Corp., 2 Main St., Melrose 76, Mass.
Ertel Engineering Corp., Kingston 31, N. Y.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
Shriver & Co., Inc., T., 864 Hamilton St., Harrison, N. J.
Sparkler Mfg. Co. Mundelein, Ill.
Sperry & Co., D. R., Batavia, Ill.

FILTERS—Synthetic Fibre

Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Armstrong Cork Co., Lancaster, Pa.
BARNSTEAD STILL & STERILIZER CO., 84 Lanesville Terrace, Boston 31, Mass. ADV. PG. 227
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Commercial Filters Corp., 2 Main St., Melrose 76, Mass.
Cuno Engineering Corp., 80 S. Vine St., Meriden, Conn
Metal Textile Corp., 647 E. First Ave., Roselle, N. J.
Niagara Filters Div. & Tolhurst Centrifugals Div., American Machine & Metals, Inc., East Moline, Ill.
Plummer, Lawley & Co., 1022 Lancaster Ave., Rosemont, Pa.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
Schleicher & Schuell Co., Carl, Keene 8, N. H.
Sethco Mfg. Co., 2293 Babylon Turnpike, Merrick, N. Y.
Shriver & Co., Inc., T., 864 Hamilton St., Harrison, N. J.
Sparkler Mfg. Co., Mundelein, Ill.
Varniton Co., 416 N. Varney St., Burbank, Calif.

FITTINGS—Pipe

See PIPE FITTINGS

FLANGES—Pipe

Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Resinous Products, Inc., Box 620, Conneaut, Ohio
Allmetal Screw Products Co., 821 Stewart Ave., Garden City, N. Y.
American Cast Iron Pipe Co., Special Products Div., 2930 N. 16th St., Birmingham, Ala.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Babcock & Wilcox Co., Tubular Products Div., Beaver Falls, Pa.
Consolidated Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
COOPER ALLOY CORP., Bloy St. & Ramsay Ave., Hillside 5, N. J. ADV. PG. 56
Duriron Co., Inc., 450 N. Findlay St., Dayton 4, Ohio
Grinnell Co., Inc., 260 W. Exchange St., Providence 1 R. I.
Industrial Plastics Fabricators, Endicott St., Norwood, Mass.
LADISH CO., 5458 S. Packard Ave., Cudahy, Wis. ADV. PG. 46, 47
Luzerne Rubber Co., Muirhead Ave., Trenton, N. J.
Marman Div., Aeroquip Corp., 11214 Exposition Blvd., Los Angeles 64, Calif.
Midwest Piping Co., Inc., 1450 S. 2nd St., St. Louis 3, Mo.
Pittsburgh Piping & Equipment Co., 158 49th St., Pittsburgh, Pa.
SANDUSKY FOUNDRY & MACHINE CO., W. Market St., Sandusky, Ohio ADV. PG. 147
Speedline Stainless Steel Fittings Div. of Horace T. Potts Co., Erie Ave. & D St., Philadelphia 34, Pa.
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England ADV. PG 66
Taylor Forge & Pipe Works, Inc., 4735 W. 14th St., Chicago 90, Ill.
Trimount Instrument Co., 3119 W. Lake St., Chicago 12, Ill.
TUBE TURNS DIV. OF CHEMETRON CORP., 224 E. Broadway, Louisville 1, Ky. ADV. PG. 31
Tube Turns Plastics, Inc., An Affiliate of Chemetron Corp., 2929 Magazine St., Louisville 11, Ky.
Vanton Pump & Equipment Corp., 201 Sweetland Ave., Hillside, N. J.
Walworth Co., 750 Third Ave., New York 17, N. Y.
WISCONSIN STAINLESS FOUNDRY & MACHINE CORP., 823 E. St. Paul Ave., Waukesha, Wis. ADV. PG. 255

FLUORIMETERS

American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
BALL BROTHERS RESEARCH CORP., Industrial Park, Boulder, Colo. ADV. PG. 74
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
Perkin-Elmer Corp., Main Ave., Norwalk, Conn.
Phoenix Precision Instrument Co., 3805—05 N. 9th St., Philadelphia, Pa.
Photovolt Corp., 95 Madison Ave., New York 16, N. Y.

FLUXMETERS—Magnetic

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
CAMBRIDGE INSTRUMENT CO., INC., 3107 Grand Central Terminal, New York 17, N. Y. ADV. PG. 237
Dyna-Empire, Inc., 1075 Stewart Ave., Garden City, N. Y.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
International Telephone & Telegraph Corp., Industrial Products Div., 250 Garibaldi Ave., Lodi, N. J.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Radio Frequency Labs., Inc., Boonton 2, N. J.
RAWSON ELECTRICAL INSTRUMENT CO., 114 Potter St., Cambridge 42, Mass. ADV. PG. 247
Varian Associates, 611 Hansen Way, Palo Alto, Calif.

FOILS

See METALS—Foil

FORGINGS

AMERICAN HOLLOW BORING CO., 1948 Raspberry St., Erie 4, Pa. ADV. PG. 217
Cameron Iron Works, P. O. Box 1212, Houston, Texas
Hoppenstall Co., 4622 Hatfield St., Pittsburgh 1, Pa.
LADISH CO., 5458 S Packard Ave., Cudahy, Wis. ADV. PG. 46, 47
Taylor Forge & Pipe Works, Inc., 4735 W. 14th St., Chicago 90, Ill.
TUBE TURNS, DIV. OF CHEMETRON CORP., 224 E. Broadway, Louisville 1, Ky. ADV. PG. 31
U. S. Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa.

FORGINGS—Hollow Bored and Honed

AMERICAN HOLLOW BORING CO., 1948 Raspberry St., Erie 4, Pa. ADV. PG. 217
Bethlehem Steel Co., Bethlehem, Pa.
National Forge & Ordnance Co., Front St., Irvine, Warren County, Pa.
United States Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa.

FOUNTAINS—Eye

Bollard Co., E. D., 2680 Bridgeway, Sausalito, Calif.
General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50, Pa.
HAWS DRINKING FAUCET CO., 1439 Fourth St., Berkeley 10, Calif. ADV. PG. 231
New Jersey Safety Equipment Co., Park Ave. at Garden State Pkwy., East Orange, N. J.

FUEL ELEMENTS

AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Lava Corp., Titania Div., Manufacturers Rd., Chattanooga 5, Tenn.
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
GENERAL ATOMIC DIV. OF GENERAL DYNAMICS CORP., P. O. Box 608, San Diego 12, Calif. ADV. PG. 83
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
KELLEY & CO., D. G., 98 Taylor St., Dorchester, Mass. ADV. PG. 64, 65
M & C NUCLEAR, INC., 40 Forest St., Attleboro, Mass. ADV. PG. 177
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
Metals Research & Development, Inc., Tunkhannock Ave., Exeter, Pa.
Minnesota Mining & Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.
NATIONAL BERYLLIA CORP., 4501 Dell Ave., North Bergen, N. J. ADV. PG. 254
NATIONAL CARBON CO., DIV. OF UNION CARBIDE CORP., 30 E. 42nd St., New York 17, N. Y. ADV. PG. Fourth Cover
National Lead Co., 111 Broadway, New York 6, N. Y.
NORTON CO., 1 New Bond St., Worcester 6, Mass. ADV. PG. 77
Olin Mathieson Chemical Corp., Nuclear Exel Div., 275 Winchester Ave., New Haven, Conn.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
Speer Carbon Co., St. Marys, Pa.
SYLVANIA-CORNING NUCLEAR CORP., 208—20 Willetts Point Blvd., Bayside, N. Y. ADV. PG. 141
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10

FUEL ELEMENTS—Fabricating Equipment

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
Consolidated Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Farrel-Birmingham Co., Inc., Ansonia, Conn.
KELLEY & CO., D. G., 98 Taylor St., Dorchester, Mass. ADV. PG. 64, 65
L&B Welding Equipment, Inc., 2424 6th St., Berkeley, Calif.
L & S Machine Co., Inc., P. O. Box 317, R. D. #2, Latrobe, Pa.
LOMA MACHINE MFG. CO., INC., 114 E. 32nd St., New York, N. Y. ADV. PG 235
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
Stanat Mfg. Co., Inc., 511 Shames Drive, Westbury, N. Y.
Vacuum Specialties Co., Inc., 34 Linden St., Somerville, Mass.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

FUEL ELEMENTS Handling & Storage Equipment

ACF INDUSTRIES, INC., NUCLEAR PRODUCTS-ERCO DIV., 508 Kennedy St., N. W., Washington 11, D. C. ADV. PG. 43
AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
Allied Resinous Products, Inc., Box 620, Conneaut, Ohio
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
Babcock & Wilcox Ltd., Babcock House, 209 Euston Rd., London N. W. 1, England
Blaw-Knox Co., 300 Sixth Ave., N.B., Pittsburgh 22, Pa.
CANADAIR LTD., P. O. Box 6987, Montreal, Que., Canada ADV. PG. 185
Consolidated Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Edlow Lead Co., 729 Bank St., Columbus 16, Ohio
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Farrel-Birmingham Co., Inc., Ansonia, Conn.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5 N. Y. ADV. PG. 37-39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
GENERAL MILLS, INC., MECHANICAL DIV., NUCLEAR EQUIPMENT DEPT., 1620 Central Ave. N. E., Minneapolis, Minn. ADV. PG. 60, 61
Heraeus GmbH, W. C., 12-14 Heraeusstr., Hanau, Germany
KELLEY & CO. O. G., 98 Taylor St., Dorchester, Mass. ADV. PG. 64, 65
Knapp Mills, Inc., 23-15 Borden Ave., Long Island City 1, N. Y.
LOMA MACHINE MFG. CO., INC., 114 E. 32nd St., New York, N. Y. ADV. PG. 235
Manco Mfg. Co., Bradley, Ill.
MARVEL SCHEBLER PRODUCTS DIV. OF BORG-WARNER CORP., Decatur, Ill. ADV. PG. 161
Nuclear Engineering Ltd., Woolwich Rd., London S. E. 7, England
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Protectoseal Co., 1920 S. Western Ave., Chicago, Ill.
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Standard Railway Equipment Mfg. Co., 200 S. Michigan Ave., Chicago 4, Ill.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
UNITED SHOE MACHINERY CORP., ATOMIC POWER DEPT., RESEARCH DIV., Balch St., Beverly, Mass. ADV. PG. 78, 79

FUME HOODS

Adler's Metal Works, 1310 Germantown Ave., Philadelphia 22, Pa.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
Allied Resinous Products, Inc., Box 620, Conneaut, Ohio
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
American Agile Corp., P. O. Box 168, Bedford, Ohio
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Artisan Metal roducts Co., Inc., 63 Pond St., Waltham 53, Mass.
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
BLICKMAN, INC., S., 7900 Gregory Ave., Weehawken, N. J. ADV. PG. 190
Brown Morse Co., Muskegon, Mich.
Bullard Co., E. D., 2680 Bridgeway, Sausalito, Calif.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
CONNEAUT RUBBER & PLASTIC CO., DIV. OF U. S. STONEWARE CO., Commerce St., Conneaut, Ohio ADV. PG. 97
Consolidated Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Duralab Equipment Corp., 980 Linwood St., Brooklyn 8, N. Y.
Electro Chemical Engineering & Mfg. Co., 750 N. Broad St., Emmaus, Pa.

Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
Hamilton Mfg. Co., Two Rivers, Wis.
Industrial Plastic Fabricators, Endicott St., Norwood, Mass.
KELLEY & CO., O. G., 98 Taylor St., Dorchester, Mass. ADV. PG. 64, 65
KEWAUNEE MFG. CO., 5083 Center St., Adrian, Mich. ADV. PG. 164
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Luzerne Rubber Co., Muirhead Ave., Trenton, N. J.
Metalab Equipment Co., Div. of Norbute Corp., 282 Duffy Ave., Hicksville, N. Y.
New Jersey Safety Equipment Co., Park Ave. at Garden State Pkwy., East Orange, N. J.
RAY-PROOF CORP., 843 Canal St., Stamford, Conn. ADV. PG. 272
Standard Railway Equipment Mfg. Co., 200 S. Michigan Ave., Chicago 4, Ill.
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Universal Industrial Equipment Co., 1625 Paterson Plank Rd., Secaucus, N. J.
Warren Corp., The, 2901 Brighton Rd., Pittsburgh 12, Pa.
Yerzley & Co., 744 Broad St., Newark 2, N. J.

FURNACES—Arc

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
Heraeus GmbH, W. C., 12-14 Heraeusstr., Hanau, Germany
LIQUID METALS, INC., Box 266, Westford, Mass. ADV. PG. 233
NRC EQUIPMENT CORP., A SUB. OF NATIONAL RESEARCH CORP., 88 Charlemont St., Newton Highlands 61, Mass. ADV. PG. 159
National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.
Oregon Metallurgical Corp., P. O. Box 484, Albany, Ore.
STOKES CORP., F. J., 5500 Tabor Rd., Philadelphia 20, Pa. ADV. PG. 268
Vacuum Industrial Applications Ltd., Netherton Rd., Wishaw, Lankarshire, Scotland
Vacuum Specialties Co., Inc., 34 Linden St., Somerville 2, Mass.

FURNACES—Combustion

American Gas Furnace Co., 130 Spring St., Elizabeth, N. J.
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
Babcock & Wilcox Ltd., Babcock House, 209 Euston Rd., London N.W. 1, England
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
GENERAL ELECTRIC CO. APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
Heraeus GmbH, W. C., 12-14 Heraeusstr., Hanua, Germany
Hevi-Duty Electric Co., 2040 W. Wisconsin Ave., Milwaukee 1, Wis
Laboratory Equipment Corp., St. Joseph, Mich.
Lindberg Engineering Co., 2450 W. Hubbard St., Chicago 12, Ill.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Selas Corp. of America, Dresher, Pa.
Surface Combustion Corp., 2375 Dorr St., Toledo 1, Ohio
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Thermal Refractories Corp., 4501 Dell Ave., North Bergen, N. J.
Towers & Co. Ltd., J. W., Victoria House, Widnes, Lancs., England

FURNACES—Constant Temperature

Adler's Metal Works, 1310 Germantown Ave., Philadelphia 22, Pa.
American Gas Furnace Co., 130 Spring St., Elizabeth, N. J.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Grieve-Hendry Co., Inc, 1401—17 W. Carroll Ave., Chicago 7, Ill.
HARPER ELECTRIC FURNACE CORP., 57 River St., Buffalo 2, N. Y. ADV. PG. 269
Harriss (Engineers), Granta Terrace, Stapleford, Cambridge, England
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany
Hevi-Duty Electric Co., 2040 W. Wisconsin Ave., Milwaukee 1, Wis.
Huppert Co., K. H., 6830 S. Cottage Grove Ave., Chicago 37, Ill.
LIQUID METALS INC., Box 266, Westford, Mass. ADV. PG. 233
Modern Laboratory Equipment Co., Dept. N, 1809—11 First Ave., New York 28, N. Y.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Rockwell Co., W. S., 200 Eliot St., Fairfield, Conn.
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Thermal Refractories Corp., 4501 Dell Ave., North Bergen, N. J.
Thermo Electric Mfg. Co., 465 Huff St., Dubuque, Iowa

FURNACES—Laboratory

Adler's Metal Works, 1310 Germantown Ave., Philadelphia 22, Pa.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
American Gas Furnace Co., 130 Spring St., Elizabeth, N. J.
Baird & Tatlock (London) Ltd., Freshwater Rd., Chadwell Heath, Essex, England
Berkeley Crystal Co., 1740 University Ave., Berkeley 3, Calif.
Burrell Corp., 2233 Fifth Ave., Pittsburgh 19, Pa.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
Eisler Engineering Co., 760 S. 13th St., Newark 3, N. J.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Gordon Co., Claud S., 619 W. 30th St., Chicago 16, Ill.
Grieve-Hendry Co., Inc., 1401—17 W. Carroll Ave., Chicago 7, Ill.
HARPER ELECTRIC FURNACE CORP., 57 River St., Buffalo 2, N. Y. ADV. PG. 269
Harriss (Engineers), Granta Terrace, Stapleford, Cambridge, England
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany
Hevi-Duty Electric Co., 2040 W. Wisconsin Ave., Milwaukee 1, Wis.
Huppert Co., K. H., 6830 S. Cottage Grove Ave., Chicago 37, Ill.
Laboratory Equipment Corp., St. Joseph, Mich.
Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
Lindberg Engineering Co., 2450 W. Hubbard St., Chicago 12, Ill.
NRC EQUIMENT CORP., A SUB. OF NATIONAL RESEARCH CORP., 88 Charlemont St., Newton Highlands 61, Mass. ADV. PG. 159
Pacific Transducer Corp., 11836 S. W. Pico Blvd., Los Angeles 64, Calif.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N.Y.
Research Vacuum Supply Co., 6712 N. Clark St., Chicago, Ill.
Rockwell Co., W. S., 200 Eliot St., Fairfield, Conn.
Selas Corp. of America, Dresher, Pa.
Surface Combustion Corp., 2375 Dorr St., Toledo 1, Ohio
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Thermal Refractories Corp., 4501 Dell Ave., North Bergen, N. J.
Thermo Electric Mfg. Co., 465 Huff St., Dubuque, Iowa
Thomas Co., Arthur A., Vine St. at Third, Box 779, Philadelphia 5, Pa.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England
Vacuum Industrial Applications, Ltd., Netherton Rd., Wishaw, Lanarkshire, Scotland

FURNACES—Microcombustion

See MICROCHEMICAL EQUIPMENT

FURNACES—Sintering

American Gas Furnace Co., 130 Spring St., Elizabeth, N. J.
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh, 30, Pa.
HARPER ELECTRIC FURNACE CORP., 57 River St., Buffalo 2, N. Y. ADV. PG. 269
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany
Hevi-Duty Electric Co., 2040 W. Wisconsin Ave., Milwaukee 1, Wis.
Laboratory Equipment Corp., St. Joseph, Mich.
Lindberg Engineering Co., 2450 W. Hubbard St., Chicago 12, Ill.
LIQUID METALS, INC., Box 266, Westford, Mass. ADV. PG. 233
NRC EQUIPMENT CORP., A SUB. OF NATIONAL RESEARCH CORP., 88 Charlemont St., Newton Highlands 61, Mass. ADV. PG. 159
National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.
Scientific Engineering Laboratory, 1510 6th St., Berkeley 10, Calif.
Selas Corp. of America, Dresher, Pa.
Surface Combustion Corp., 2375 Dorr St., Toledo 1, Ohio
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Thermal Refractories Corp., 4501 Dell Ave., North Bergen, N. J.
Thermo Electric Mfg. Co., 465 Huff St., Dubuque, Iowa
Vacuum Industrial Applications Ltd., Netherton Rd., Wishaw, Lankarshire, Scotland
Vacuum Specialties Co., Inc., 34 Linden St., Somerville 2, Mass.

FURNACES—Vacuum

Adler's Metal Works 1310 Germantown Ave., Philadelphia 22, Pa.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Firth Sterling, Inc., 1313 Forbes St., Pittsburgh 30, Pa.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
HARPER ELECTRIC FURNACE CORP., 57 River St., Buffalo 2, N. Y. ADV. PG. 269
Harriss (Engineers), Granta Terrace, Stapleford, Cambridge, England
Heraeus GmbH, W. C., 12-14 Heraeusstr., Hanau, Germany
Hevi-Duty Electric Co., 2040 W. Wisconsin Ave., Milwaukee 1, Wis.
High Vacuum Equipment Corp., 2 Churchill Rd., Hingham, Mass.
Huppert Co., K. H., 6830 S. Cottage Grove Ave., Chicago 37, Ill.
International Pump & Machine Works, 81 Dorsa Ave., Livingston, N. J.
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
Kinney Mfg. Div. The New York Air Brake Co., 3529 Washington St., Boston 30, Mass.
Kinetics Corp., 2 Churchill Rd., Hingham, Mass.
Koven Fabricators, Inc., 98 E. Dickerson St., Dover, N. J.
L&B Welding Equipment Inc., 2424 6th St., Berkeley, Calif.
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Lindberg Engineering Co., 2450 W. Hubbard St., Chicago 12, Ill.
LIQUID METALS, INC., Box 266, Westford, Mass. ADV. PG. 233
NRC EQUIPMENT CORP., A SUB. OF NATIONAL RESEARCH CORP., 88 Charlemont St., Newton Highlands 61, Mass. ADV. PG. 159
Nash & Thompson, Ltd., Oakcroft Rd., Chessington, Surrey, England
National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.
NUCLEAR MATERIALS & EQUIPMENT CORP., 680 Warren Ave., Apollo, Pa. ADV. PG. 163
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Oregon Metallurgical Corp., P. O. Box 484, Albany, Ore.
Resitron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
Scientific Engineering Laboratory, 1510 6th St., Berkeley 10, Calif.
Stewart Engineering Co., P. O. Box 277, Soquel, Calif.
STOKES CORP., F. J., 5500 Tabor Rd., Philadelphia 20, Pa. ADV. PG. 268
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Vacuum Equipment Div. of The New York Air Brake Co., 1925 Admiral Wilson Blvd., Camden 11, N. J.
Vacuum Industrial Applications, Ltd., Netherton Rd., Wishaw, Lanarkshire, Scotland
Vacuum Specialties Co., Inc., 34 Linden St., Somerville, Mass.

FURNITURE—Laboratory

See Also CABINETS; HOODS; TABLE TOPS, etc

Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Aloe Scientific Div., A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
Amco Engineering Co., 7333 Ainslie St., Chicago 31, Ill.
Baird & Tatlock (London) Ltd., Freshwater Rd., Chadwell Heath, Essex, England
Bernard-Franklin Co., Inc., 4155 E. Hedley St., Philadelphia 37, Pa.
BLICKMAN CO., S., 7900 Gregory Ave., Weehawken, N. J. ADV. PG. 190
Brown Morse Co., Muskegon, Mich.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Duralab Equipment Corp., 980 Linwood St., Brooklyn 8, N. Y.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
Hamilton Mfg. Co., Two Rivers, Wis.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
KEWAUNEE MFG. CO., 5083 S. Center St., Adrian, Mich. ADV. PG. 164
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Metalab Equipment Co., Div. of Norbute Corp., 282 Duffy Ave., Hicksville, N. Y.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
TECHNICAL SERVICE CORP., 1404 W. Market St., Louisville 3, Ky. ADV. PG. 237
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England
Townson & Mercer Ltd., Croydon, Surrey, England
U. S. Stoneware Co., Akron 9, Ohio
Universal Industrial Equipment Co., 1625 Paterson Plank Rd., Secaucus, N. J.
Warren Corp., The, 2901 Brighton Rd., Pittsburgh 12, Pa.

FUSES

Bussmann Mfg. Div., McGraw-Edison Co., University at Jefferson, St. Louis 7, Mo.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
Hughes Products, Airport Station, Los Angeles 45, Calif.
Littelfuse Inc., Des Plaines, Ill.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

GAGES

See also CONTROLS
INDICATORS
METERS

GAGES—Flow

See METERS—Flow

GAGES—Humidity

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Man, Germany
Abbeon Supply Co., 179-15 Jamaica Ave., Jamaica 32, N. Y.
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Cooper Co., D. C., 1467 S. Michigan Ave., Chicago, Ill.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
FRIEZ INSTRUMENT DIV., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50, Pa.
Hill & Co., E. Vernon, P. O. Box 189, Lake Geneva, Wis.
Kahl Scientific Instrument Corp., P. O. Box 1166, El Cajon, Calif.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Negretti & Zambra Ltd., 122 Regent St., London, W. 1, England
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. ADV. PG. 198, 199
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago 10, Ill. ADV. PG. 91
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Science Associates, Box 216, 194 Nassau St., Princeton, N. J.
Weksler Instruments Corp., 195 E. Merrick Rd., Freeport, N. Y.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.

GAGES—Ionization

See CHAMBERS—Ionization

GAGES—Liquid Level

Acoustica Associates, Inc., 26 Windsor Rd., Mineola, N. Y.
AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
ASSOCIATED VALVE & ENGINEERING CO., 1150 W. Marquette Rd., Chicago 21, Ill. ADV. PG. 252
Automatic Timing & Controls, Inc., King of Prussia, Pa.
B-I-F Industries, Inc., 530-D Harris Ave., Providence 1, R. I.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
Baldwin-Lima-Hamilton Corp., Electronics & Instrumentation Div., 42 Fourth Ave., Waltham 54, Mass.
Barton Instrument Corp., 580 Monterey Pass Rd., Monterey Park, Calif.
BENDIX AVIATION CORP., BENDIX-PACIFIC DIV., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Collins Corp., G. L., 2820 Hullett St., Long Branch, Calif.
Conoflow Corp., 2100 Arch St., Philadelphia 3, Pa.
COOPER ALLOY CORP., Bloy St., & Ramsey Ave., Hillside 5, N. J. ADV. PG. 56
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Fielden Electronics Ltd., Paston Rd., Whytenshawe, Manchester, England
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Grinnell Co., 260 W. Exchange St., Providence 1, R. I.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Hays Corp., Michigan City 40, Inc.
Industrial Nucleonics Corp., 1205 Chesapeake Ave., Columbus 12, Ohio
Instruments, Inc., 122 N. Madison P. O. Box 556, Tulsa, Okla.
ISOTOPE DEVELOPMENTS LTD., Beenham Grange, Aldermaston Wharf nr Reading, Berks, England ADV. PG. 226
Isotopes Products Div., Canadian Curtiss-Wright, Ltd., Davis Rd., Oakville, Ontario, Canada.
Jerguson Gage & Valve Co., Adams St., Burlington, Mass.
Keckley Co., O. C., 3400 Cleveland St., Skokie, Ill.
Lunkenheimer Co., The, Beekman St., & Waverly Ave., Cincinnati 14, Ohio
Magnetic Instruments Co., Inc., 546 Commerce St., Thornwood, N. Y.
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Mason-Neilan, Nahatan St., Norwood, Mass.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Meriam Instrument Co. The, 10920 Madison Ave., Cleveland 2, Ohio
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
NARDA ULTRASONICS CORP., DEPT. NBG, 625 Main St., Westbury, N. Y. ADV. PG. 113
Negretti & Zambra Ltd., 122 Regent St., London, W. 1, England
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. ADV. PG. 198, 199
Nuclear Aids Corp., 12 N. Michigan Ave., Chicago, Ill.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Nuclear Research Corp., Southampton, Pa.
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
Ohmart Corp., 2236 Bogen St., P. O. Box 67, Sta. B, Cincinnati 22, Ohio
Powell Co., William, The, 2525 Spring Grove Ave. Cincinnati 22, Ohio
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
Simmonds Aerocessories, Inc., 105 White Plains Rd., Tarrytown, N. Y.
Simplex Valve & Meter Co., 7 E. Orange St., Lancaster, Pa.
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas
TRACERLAB INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Trimount Instrument Co. 3119 W. Lake St., Chicago 2, Ill.
Vogt Machine Co., Henry, 1000 W. Ormsby St., Louisville, Ky.
Wallace & Tiernan, Inc., 25 Main St., Belleville 9, N. J.
X-Ray Dept. of General Electric Co., 4855 Electric Ave., Milwaukee, Wis.
Yarnall-Waring Co., Chestnut Hill, Philadelphia 18, Pa.

GAGES—McLeod

GAGES—Pirani

See GAGES—Pressure

GAGES—Pressure

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Air Reduction Sales Co., A Div. of Air Reduction Co., Inc., 150 E. 42nd St., New York 17, N. Y.
Autoclave Eng. Sales Corp., 2930 W. 22nd St., Erie, Pa.
Automatic Timing & Controls Inc., King of Prussia, Pa.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Baldwin-Lima-Hamilton Corp., Electronics & Instrumation Div., 42 Fourth Ave., Waltham 54, Mass.
Barton Instrument Corp., 580 Monterey Pass Rd., Monterey Park, Calif.
Bently Scientific Co., 2811 Seventh St., Berkeley 10, Calif.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Collins Corp., G. L., 2820 Hullett St., Long Beach, Calif.
Computer Instruments Corp., 92 Madison Ave., Hempstead, N. Y.
Conoflow Corp., 2100 Arch St., Philadelphia 3, Pa.
Consolidated Controls Corp., Durant Ave., Bethel, Conn.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Ivd., Rochester, N. Y.
Crosby Valve & Gage Co., 43 Kendrick St., Wrentham, Mass.
Dynamic Instrument Co., Inc., 28 Carleton St., Cambridge, Mass.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Elliott Brothers (London) Century Works, Lewisham, London S. E. 13, England
Fielden Electronics, Ltd., Paston Rd., Whythenshawe, Manchester, England
Fischer & Porter Co. 50 Warminster Rd., Hatboro, Pa.
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston, Ill. ADV. PG. 229
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
Gulton Industries, Durham Ave., Metuchen N. J.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30 Pa.
Hastings-Raydist Inc., Newcomb Ave., Hampton, Va.
Hays Corp., Michigan City 40, Ind.
Heise-Bourdon Tube Co., Inc., 1 Brook Rd., Newtown, Conn.
Helicoid Gage Div., American Chain & Cable Co., Inc., 929 Connecticut Ave., Bridgeport 2, Conn.
Hill Co., E. Vernon, P. O. Box 189, Lake Geneva, Wis.
International Register Co., 2620 W. Washington Blvd., Chicago 12, Ill.
Kunkle Valve Co., 119 S. Clinton St., Fort Wayne, Ind.
M S A Research Corp., Callery, Pa.
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Mason-Neilan, Nahatan St., Norwood, Mass.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
NRC EQUIPMENT CORP., A SUB. OF NATIONAL RESEARCH CORP., 88 Charlemont St., Newton Highlands 61, Mass. ADV. PG. 159
National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.
Negretti & Zambra Ltd., 122 Regent St., London, W. 1, England
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn, N. Y.
PHILIPS' GLOEILAMPENFARRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Photocon Research Products, 421 N. Altadena Drive, Pasadena, Calif.
Powers Regulator Co., The, 3400 Oakton St., Skokie 81, Ill.
Research Vacuum Supply Co., 6712 N. Clark St., Chicago, Ill.
Schaevitz Engineering, P. O. Box 505, Camden 1, N. J.
Science Associates, Box 216, 194 Nassau St., Princeton, N. J.

Servomechanisms, Inc., 12500 Aviation Blvd., Hawthorne, Calif.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Trimount Instrument Co., 3119 W. Lake St., Chicago 12, Ill.
Vacuum Industrial Applications, Ltd., Netherton Rd., Wishaw, Lanarkshire, Scotland
Veeco Vacuum Corp., 86 Denton Ave., New Hyde Park, N. Y.
Vickers Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
Wallace & Tiernan, Inc., 25 Main St., Belleville 9, N. J.
Weksler Instruments Corp., 195 E. Merrick Rd., Freeport, N. Y.

GAGES—Strain

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
Baldwin-Lima-Hamilton Corp., Electronics & Instrumentation Div., 42 Fourth Ave., Waltham 54, Mass.
Bruel & Kjaer, Naerum, Denmark
Collins Corp., G. L., 2820 Hullett St., Long Beach, Calif.
Dynamic Instrument Co., Inc., 28 Carlton St., Cambridge, Mass.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
Fielden Electronics, Ltd., Paston Rd., Whytenshawe, Manchester, England
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Schaevitz Engineering, P. O. Box 505, Camden 1, N. J.
Statham Instruments, Inc., 12401 W. Olympic Blvd., Los Angeles 64, Calif.

GAGES—Thickness or Density, Nonradioactivity

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Bently Scientific Co., 2811 Seventh St., Berkeley 10, Calif.
Boonton Radio Corp., Boonton, N. J.
Branson Instruments, Inc., 37 Brown House Rd., Stamford, Conn.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Burndept Ltd., West St., Erith, Kent, U. K.
Custom Scientific Instruments, Inc., P. O. Box 170, Kearny, N. J.
Dawe Instruments Ltd., 99—101 Uxbridge Rd., Ealing, London W. 5, England
Dice Co., J. W., Englewood 41, N. J.
Electronic Control Corp., 1573 E. Forest Ave., Detroit 7, Mich.
Fielden Eectronics, Ltd., Paston Rd., Whythenshawe, Manchester, Engand
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
Gulton Industries, Durham Ave., Metuchen, N. J.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Nash & Thompson Ltd., Oakcroft Rd., Chessington, Surrey, England
Pacific Transducer Corp., 11836 SW Pico Bvd., Los Angeles 64, Calif.
Philips Electronics, Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Schaevitz Engineering, P. O. Box 505, Camden 1, N. J.
Unit Process Assemblies, 61 E. 4th St., New York 3, N. Y.
Wayne Kerr Corp., P. O. Box 801, Philadelphia 5, Pa.
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.

GAGES—Thickness or Density, Radioactivity

AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Isand City 6, N. Y. ADV. PG. 186
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
BUDD CO., NUCLEAR SYSTEMS DIV., 2950 Roberts Ave., Philadelphia 32, Pa. ADV. PG. 187
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Fielden Electronics, Ltd., Paston Rd., Whytenshawe, Manchester, England
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Industrial Nucleonics Corp., 1205 Chesapeake Ave., Columbus 12, Ohio
Instruments, Inc., 122 N. Madison, P. O. Box 556, Tulsa, Okla.
ISOTOPE DEVELOPMENTS LTD., Beeham Grange Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
Isotope Products Div., Canadian Curtiss-Wright, Ltd., Davis Rd., Oakville, Ontario, Canada
MALAKER ASSOCIATES, STEPHEN F., 24 Commerce St., Newark, N. J. ADV. PG. 249
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Nuclear Research Corp., Southampton, Pa.
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
Ohmart Corp., 2236 Bogen St., P. O. Box 67, Sta. B, Cincinnati 22, Ohio
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
SHEFFIELD CORP., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charrone, Paris, France
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Western Radiation Lab., 1107 W. 24th St., Los Angeles 7, Calif.
X-Ray Dept. of General Electric Co., 4855 Electric Ave., Milwaukee, Wis.

GAGES—Vacuum

See CONTROLS—Vacuum

GALVANOMETERS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
CAMBRIDGE INSTRUMENT CO., INC., 3107 Grand Central Terminal, New York 17, N. Y. ADV. PG. 237
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Edin Co., A Div. of Epsco, Inc., 207 Main St., Worcester, Mass.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Epic, Inc., 154 Nassau St., New York 38, N. Y.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
G-M Laboratories, Inc., 4336 N. Knox Ave., Chicago 41, Ill.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Greibach Instruments Corp., 315 North Ave., New Rochelle, N. Y.
Hathaway Instrument Div., Hamilton Watch Co., 5800 E. Jewell, Denver, Colo.
Heiland Div. of Minneapolis-Honeywell Regulator Co., 5200 E. Evans Ave., Denver 22, Colo.
J-B-T Instruments, Inc., 133 Hamilton St., New Haven 8, Conn.
Kin Tel, 5725 Kearny Villa Rd., San Diego 11, Calif.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Meters, Inc., 5353 N. Keystone Ave., Indianapolis 20, Ind.
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Minneapolis-Honeywell Regulator Co., Rubicon Instruments, Ridge Ave. at 35th St., Philadelphia 32, Pa.
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. ADV. PG. 198, 199
Pace Electrical Instruments Co., Inc., 70-31 84th St., Glendale 27, Calif.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Photron Instrument Co., 6516 Detroit Ave., Cleveland 2, Ohio
Precision Apparatus Co., Inc., 70-31 84th St., Glendale 27, N. Y.
Q. V. S., Inc., 20 N. 15th St., East Orange, N. J.
Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
Stoelting Co., C. H., 424 N. Homan Ave., Chicago 24, Ill.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.
Winslow Co., Inc., 705 Lehigh Ave., P. O. Box 394, Union, N. J.

GAMMA-RAY SOURCES

See ISOTOPES—Radioactive

GASES

Air Reduction Sales Co., Div. of Air Reduction Co., Inc., 150 E. 42nd St., New York 17, N. Y.
Bio-Rad Laboratories, 1257 S. 32nd St., Richmond, Calif.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
LINDE CO., DIV. OF UNION CARBIDE CORP., 420 Lexington Ave., New York 17, N. Y. ADV. PG. 180
Liquid Carbonic Div. of General Dynamics Corp., 3100 S. Kedzie Ave., Chicago 23, Ill.
MATHESON CO., 932 Paterson Plank Rd., East Rutherford, N. J. ADV. PG. 229
Pennsalt Chemicals Corp., 3 Penn Center, Philadelphia 2, Pa.
RADIOCHEMISTRY, INC., 1111 W. St. Catherine St., Louisville 10, Ky. ADV. PG. 242

GASES—Counter

ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Land Air, Inc., 2133 Adams Ave., San Leandro, Calif.
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146 Bd. de Charonne, Paris, France
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Twentieth Century Electronics Ltd., Centronics Works, New Addington, Croydon, Surrey, England

GASES—Flow Counter

ATOMIC ACCESSORIES, INC., 244—04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
INSTRUMENTATION ASSOCIATES, 17 W. 60th St., New York 23, N. Y. ADV. PG. 229
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
MATHESON CO., 932 Paterson Plank Rd., East Rutherford, N. J. ADV. PG. 229
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63.
Potter Aeronautical Corp., Route 22, Union, N. J.
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146 Bd. de Charonne, Paris, France

GASES—Inert

Air Reduction Sales Co., Div. of Air Reduction Co., Inc., 150 E. 42nd St., New York 17, N. Y.
Baker & Adamson Products, General Chemical Div. of Allied Chemical Corp., 40 Rector St., New York 6, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
LINDE CO., DIV. OF UNION CARBIDE CORP., 420 Lexington Ave., New York 17, N. Y. ADV. PG. 180
Liquid Carbonic Div. of General Dynamics Corp., 3100 S. Kedzie Ave., Chicago 23, Ill.
MATHESON CO., 932 Paterson Plank Rd., East Rutherford, N. J. ADV. PG. 229
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
RADIOCHEMISTRY, INC., 1111 W. St. Catherine St., Louisville 10, Ky. ADV. PG. 242

GASES—Liquefied

Air Reduction Sales Co., Div. of Air Reduction Co., Inc., 150 E. 42nd St., New York 17, N. Y.

HOFMAN LABORATORIES, INC., Evans Terminal, Hillside, N. J. ADV. PG. 34
LINDE CO., DIV. OF UNION CARBIDE CORP., 420 Lexington Ave., New York 17, N. Y. ADV. PG. 180
Liquid Carbonic Div. of General Dynamics Corp., 3100 S. Kedzie Ave., Chicago 23, Ill.
MATHESON CO., 932 Paterson Plank Rd., East Rutherford, N. J. ADV. PG. 229

GASKETS

Advanced Products Co., 59 Broadway, North Haven, Conn.
Akron Metallic Gasket Co., The, 150 N. Union St., Akron, Ohio
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Andrew Co., Otis, 231—233 W. Court St., Cincinnati 2, Ohio
Armstrong Cork Co., Lancaster, Pa.
Auburn Mfg. Co., The, 500 Stack St., Middletown, Conn.
Automatic & Precision Mfg. Co., 252 Hawthorne Ave., Yonkers 5, N. Y.
Bacon Industries, Inc., 192 Pleasant St., Watertown, Mass.
Chicago Gasket Co., 1271 W. North Ave., Chicago 22, Ill.
CRANE PACKING CO., 6400 Oakton St., Morton Grove, Ill. ADV. PG. 182
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
Emerson Plastics Corp., 1383 Seabury Ave., Bronx 61, N. Y.
Felt Products Mfg. Co., 7450 N. McCormick Blvd., Skokie, Ill.
Garlock Packing Co., The, Palmyra, N. Y.
Haynes Stellite Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
Johns-Manville, 22 E. 40th St., New York 16, N. Y.
Metallo Gasket Co., 13 Bethany St., New Brunswick, N. J.
National Vulcanized Fibre Co., Wilmington 99, Del.
Penn Fibre & Specialty Co., 2020 E. Westmoreland St., Philadelphia 34, Pa.
Polymer Corp., The, Reading, Pa.
Resistoflex Corp., Roseland, N. J.
Roberts Toledo Rubber Co., 4143 Monroe St., Toledo 13, Ohio
Sparta Mfg. Co., Div. of U. S. Ceramic Tile Co., Dover, Ohio
Techniques, Inc., P. O. Box 85, Hackensack, N. J.
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
U. S. Gasket Co., Plastics Div. of The Garlock Packing Co., 600 N. 10th St., Camden 1, N. J.
U. S. Stoneware Co., Akron 9, Ohio.

GEARS

Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Belock Instrument Corp., 111-01 14th Ave., College Point, N. Y.
Bowmar Instrument Corp., 8000 Bluffton Rd., Fort Wayne, Ind.
Edison Industries, Thomas A., Instrument Div., West Orange, N. J.
LaVezzi Machine Works, 4635 W. Lake St., Chicago 44, Ill.
Link Aviation, Inc., Binghamton, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
National Vulcanized Fibre Co., Wilmington 99, Del.
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Peerless Instrument Co., Inc., 90-15 Corona Ave., Elmhurst 73, N. Y.
Precision Methods & Machine, Inc., Cumberland Drive, Waterbury, Conn.
Reeves Instrument Corp., Roosevelt Field, Garden City, N. Y.
Research Development Manufacture, Inc., 429 E. Collom St., Philadelphia 44, Pa.
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
Sunstrand-Turbo Div. of Sunstrand Machine Tool, Pacoima, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Western Gear Corp., P. O. Box 182, Lynwood, Calif.
WISCONSIN STAINLESS FOUNDRY & MACHINE CORP., 823 E. St. Paul Ave., Waukesha, Wis. ADV. PG. 255

GEIGER-MULLER TUBES— Self-Quenching

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34-01 30th St., Long Island City 6, N. Y. ADV. PG. 186
Amperex Electronic Corp., 230 Duffy Ave., Hicksville, N. Y.
ANTON ELECTRONIC LABS., INC., 1226-38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMIC ACCESSORIES INC., 244-04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Electronic Products Co., 111 E. Third St., Mount Vernon, N. Y.
El-Tronics, Inc., Suburban Station Bldg., Philadelphia, Pa.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Glass Engineering Laboratories, 601 O'Neil Ave., Belmont, Calif.
Instruments, Inc., 122 N. Madison, P. O. Box 556, Tulsa, Okla.
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
LANDSVERK ELECTROMETER CO., 641 Sonora Ave., Glendale 1, Calif. ADV. PG. 209
Mullard Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Development Laboratory, P. O. Box 7034, Kansas City, Mo.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surrey), England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Philips Electronics, Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Twentieth Century Electronics Ltd. Centronics Works, King Henry's Drive, New Addington, Surrey, England
VICTOREEN INSTRUMENT CO., 5800-11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
WOOD COUNTER LABORATORY, N., 1525 E. 53rd St., Chicago 15, Ill. ADV. PG. 207

GEIGER-MULLER TUBES— Thick Wall, Glass

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34-01 30th St., Long Island City 6, N. Y. ADV. PG. 186
ANTON ELECTRONIC LABS., INC., 1226-38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMIC ACCESSORIES INC., 244-04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Electronic Products Co., 111 E. Third St., Mount Vernon, N. Y.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Glass Engineering Laboratories, 601 O'Neil Ave., Belmont, Calif.
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surrey), England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Twentieth Century Electronics Ltd., Centronics Works, King Henry's Drive, New Addington, Surrey, England
WOOD COUNTER LABORATORY, N., 1525 E. 53rd St., Chicago 15, Ill. ADV. PG. 207

GEIGER-MULLER TUBES— Thick Wall, Metal

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Island City 6, N. Y. ADV. PG. 186
Amperex Electronic Corp., 230 Duffy Ave., Hicksville, N. Y.
ANTON ELECTRONIC LABS., INC., 122-38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMIC ACCESSORIES INC., 244-04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Electronic Products Co., 111 E. Third St., Mount Vernon, N. Y.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Mullard Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Development Laboratory, P. O. Box 7034, Kansas City, Mo.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surrey), England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Twentieth Century Electronics Ltd., Centronics Works, King Henry's Drive, New Addington, Surrey, England
WOOD COUNTER LABORATORY, N., 1525 E. 53rd St., Chicago 15, Ill. ADV. PG. 207

GEIGER-MULLER TUBES— Thin Wall

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34-01 30th St., Long Island City 6, N. Y. ADV. PG. 186
Amperex Electronic Corp., 230 Duffy Ave., Hicksville, N. Y.
ANTON ELECTRONIC LABS., INC., 1226-38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMIC ACCESSORIES INC., 244-04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Electronic Products Co., 111 E. Third St., Mount Vernon, N. Y.
El-Tronics, Inc., Suburban Station Bldg., Philadelphia, Pa.
Glass Engineering Laboratories, 601 O'Neil Ave., Belmont, Calif.
Instruments, Inc., 122 N. Madison, P. O. Box 556, Tulsa, Okla.
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
LANDSVERK ELECTROMETER CO., 641 Sonora Ave., Glendale 1, Calif. ADV. PG. 209
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Mullard Ltd., Mullard House, Torrington Pl., London W. C. 1, England
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis, 19, Mo.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Development Laboratory, P. O. Box 7034, Kansas City, Mo.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surrey), England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIOCHEMISTRY, INC., 1111 W. St. Catherine St., Louisville 10, Ky. ADV. PG. 242
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54 Mass. ADV. PG. 151, 152, 157
Twentieth Century Electronics Ltd., Centronics Works, King Henry's Drive, New Addington, Surrey, England
VICTOREEN INSTRUMENT CO., 5800-11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Western Radiation Lab., 1107 W. 24th St., Los Angeles 7, Calif.
WOOD COUNTER LABORATORY, N., 1525 E. 53rd St., Chicago 15, Ill. ADV. PG. 207

GEIGER-MULLER TUBES— Thin Window

AMERICAN TRADAIR CORP., SUB OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Island City 6, N. Y. ADV. PG. 186
Amperex Electronic Corp., 230 Duffy Ave., Hicksville, N. Y.
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMIC ACCESSORIES INC., 244—04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Electronic Products Co., 111 E. Third St., Mount Vernon, N. Y.
El-Tronics, Inc., Suburban Station Bldg., Philadelphia, Pa.
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston, Ill. ADV. PG. 229
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, C. W. 2
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
LANDSVERK ELECTROMETER CO., 641 Sonora Ave., Glendale 1, Calif. ADV. PG. 209
Mullard Ltd., Mullard House, Torrington Pl., London, C. W. 1, England
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.

Nuclear Aids Corp., 612 N. Michigan Ave., Chicago, Ill.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Development Laboratory, P. O. Box 7034, Kansas City, Mo.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surrey), England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Philips Electronics, Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
RADIOCHEMISTRY, INC., 1111 W. St. Catherine St., Louisville 10, Ky. ADV. PG. 242
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Twentieth Century Electronics Ltd., Centronics Works, King Henry's Drive, New Addington, Surrey, England
WOOD COUNTER LABORATORY, N., 1525 E. 53rd St., Chicago 15, Ill. ADV. PG. 207

GENERATORS—Neutron

American-Standard Atomic Energy Div., 1682 Broadway, Redwood City, Calif.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
Atomic Laboratories, Berkeley, Calif.
Geisler Laboratories, P. O. Box 252, Menlo Park, Calif.
HIGH VOLTAGE ENGINEERING CORP., S. Bedford St., Burlington, Mass. ADV. PG. 189
McCullough Tool Co., 5820 S. Alameda St., Los Angeles 58, Calif.
Schlumberger Well Survey Corp., Ridgefield, Conn.
TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas ADV. PG. 205
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157

GENERATORS—Pulse & Square Wave

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Acoustica Associates, Inc., 26 Windsor Rd., Mineola, N. Y.
Arenberg Ultrasonic Lab., Inc., 94 Green St., Jamaica Plain 30, Mass.
Cascade Research Corp., 53 Victory Lane, Los Gatos, Calif.
Clegg Laboratories Div. of Clegg, Inc., Ridgedale & Hanover Aves., Morristown, N. J.
Cossor Instruments, Ltd., Cossor House Highbury Grove, London, N5, England
Daven Co., The, Route 10, Livingston N. J.
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
Elcor, Inc., Box 354, McLean, Va.
Electrical & Physical Instrument Corp., 42—19 27th St., Long Island City 1, N. Y.
Electromation Co., 1646 18th St., Santa Monica, Calif.
Fleming Radio (Developments), Ltd., Stevenage, Herts, England, U. K.
Franklin Electronics, Inc., E. Fourth St., Bridgeport, Pa.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
General Radiological Ltd., 15—18 Clipstone St., London, W. 1, England
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
Heath Co., Benton Harbor, Mich.
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland 8, Ohio
Kay Electric Co., 14 Maple Ave., Pine Brook, N. J.
Laboratory for Electronics, Inc., 75 Pitts St., Boston 14, Mass.
Lavoie Laboratories, Inc., Matawan-Freehold Rd., Morganville, N. J.
Manson Laboratories, Inc., 375 Fairfield Ave., Stamford, Conn.
Measurements Corp., Boonton, N. J.
Mullard Equipment Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
Navigation Computer Corp., 1621 Snyder Ave., Philadelphia 45, Pa.
Northeast Scientific Corp., 817 Concord Ave., Cambridge 38, Mass.
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey) England
NUCLEONIC LABS., INC., 5218 Park Heights Ave., Baltimore 15, Md. ADV. PG. 245
PCA Electronics, Inc., 16799 Schoenborn St., Sepulveda, Calif.
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
Peschel Electronics, Inc., R.F.D. #1, Patterson, N. Y.
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 1, Mass.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Plastic Capacitors, Inc., 220 N. Clybourn Ave., Chicago 14, Ill.
Polarad Electronics Corp., 43—20 34th St., Long Island City 1, N. Y.
Precision Apparatus Co., Inc., 70—31 84th St., Glendale 27, N. Y.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT CO., P. O. Box 733, Silver Spring, Md. ADV. PG. 250
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Radio City Products Co., Inc., Centre & Glendale Sts., Easton, Pa.
Rank Cintel Ltd., Worsely Bridge Rd., London, S. E. 26, England
Roy Co., Milton, 1300 E. Mermaid Lane, Philadelphia 18, Pa.
Rutherford Electronics Corp., 8944 Lindblade St., Culver City, Calif.
Schaevitz Engineering, P. O. Box 505, Camden 1, N. J.
Simpson Electric Co., Div. of American Gage & Machine Co., 5208 W. Kinzie St., Chicago 44, Ill.
Specialty Engineering & Electronics Co., 79 Clifton Place, Brooklyn 38, N. Y.
Sperry Gyroscope Div. of Sperry-Rand Corp., Great Neck, N. Y.
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
Technitrol Engineering Corp., Emerald St. Allegheny Ave., Philadelphia 34, Pa.
Tektronix, Inc., P. O. Box 831, Portland 7, Ore.
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.
Telecomputing Corp., 915 Citrus Ave., Los Angeles 38, Calif.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Teletronics Laboratory, Inc., 54 Kinkel St., Westbury, N. Y.
Telonic Industries, 73 N. 2nd Ave., Beech Grove, Ind.
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
Varo Mfg. Co., Inc., 2201 Walnut St., Garland, Texas
Walkirt Co., The, 141 W. Hazel St., Inglewood 3, Calif.
Wang Laboratories, Inc., 37 Hurley St., Cambridge 41, Mass.

GENERATORS—Signal

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Acoustica Associates, Inc., 26 Windsor Rd., Mineola, N. Y.
Airmec Ltd., High Wycombe, Buckinghamshire, England
Allied Radio Corp., 100 N. Western Ave., Chicago 80, Ill.
Bogen Co., David., Dept. MHN, P. O. Box 500, Paramus, N. J.
Boonton Radio Corp., Boonton, N. J.
Bruel & Kjaer, Naerum, Denmark
Clegg Laboratories, Inc., Div. of Clegg, Inc., Ridgedale & Hanover Aves., Morristown, N. J.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Daven Co., The, Route 10, Livingston, N. J.
Electric Indicator Co., Inc., Camp Ave., Stamford, Conn.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Geisler Laboratories, P. O. Box 252, Menlo Park, Calif.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London,W. C. 2
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
Heath Co., Benton Harbor, Mich.
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
Hycon Eastern, Inc., 75 Cambridge Parkway, Cambridge 42, Mass.
Industrial Test Equipment Co., 55 E. 11th St., New York 3, N. Y.
Intercontinental Dynamics Corp., 170 Coolidge Ave., Englewood, N. J.
Jackson Electrical Instrument Co., 16 S. Patterson Blvd., Dayton 1, Ohio
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Inc. ADV. PG. 254
Kay Electric Co., 14 Maple Ave., Pine Brook, N. J.
Kellogg Switchboard & Supply Co., IT&T Div., 6650 Cicero Ave., Chicago 38, Ill.
Lavoie Laboratories, Inc., Matawan-Freehold Rd., Morganville, N. J.
Leland Instruments, Ltd., 22—23 Millbank, Westminster, London, S. W. 1, England
Manson Laboratories, Inc., 375 Fairfield Ave., Stamford, Conn.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Measurements Corp., Boonton, N. J.
Muirhead & Co., Ltd., Beckenham, Kent, England
Northeast Scientific Corp., 617 Concord Ave., Cambridge 38, Mass.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Polarad Electronics Corp., 43—20 34th St., Long Island City, N. Y.
Precision Apparatus Co., Inc., 70—31 84th St., Glendale 27, N. Y.
Radio City Products Co., Inc., Centre & Glendale Sts., Easton, Pa.
RADIO CORPORATION OF AMERICA, TUBE DIV., 415 S. Fifth St., Harrison, N. J. ADV. PG. 170
Rank Cintel Ltd., Worsley Bridge Rd., London S. E. 26, England
Schaevitz Engineering, P. O. Box 505, Camden 1, N. J.
Scott, Inc., H. H., 111 Powder Mill Rd., Maynard, Mass.
Simpson Electric Co., Div. of American Gage & Machine Co., 5208 Kinzie St., Chicago 44, Ill.
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058 Houston 19, Texas
Specialty Engineering & Electronics Co., 79 Clifton Place, Brooklyn 38, N. Y.
Sperry Gyroscope Div. of Sperry-Rand Corp., Great Neck, N. Y.
Technitrol Engineering Corp., Emerald St. & Allegheny Ave., Philadelphia 34, Pa.
Tektronix, Inc., P. O. Box 831, Portland 7, Ore.
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Tel-Instrument Electronics Corp., 728 Garden St., Carlstadt, N. J.
Telonic Industries, 73 N. 2nd Ave., Beech Grove, Ind.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Walkirt Co., The, 141 W. Hazel St., Inglewood 3, Calif.
Waltham Electronics Corp., 751 Main St., Waltham, Mass.
Wang Laboratories, Inc., 37 Hurley St., Cambridge 41, Mass.
Wave Particle Corp., P. O. Box 252, Menlo Park, Calif.
Waveforms, Inc., 333 Sixth Ave., New York 14, N. Y.

GENERATORS—Sliding Pulse

Clegg Laboratories Div. of Clegg, Inc., Ridgedale & Hanover Aves., Morristown, N. J.
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
RADIATION INSTRUMENT CO., P. O. Box 733, Silver Spring, Md. ADV. PG. 250
Rank Cintel Ltd., Worsley Bridge Rd., London, S. E. 26, England
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Teletronics Laboratory, Inc., 54 Kinkel St., Westbury, N. Y.
Wang Laboratories, Inc., 37 Hurley St., Cambridge 41, Mass.

GENERATORS—Steam

See STEAM GENERATORS
See also HEAT EXCHANGERS

GENERATORS—Time Delay

Clegg Laboratories Div. of Clegg Inc., Ridgedale Hanover Aves., Morristown,' N. J.
Communication Accessories Co., Lee's Summit, Mo.
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
Measurement Engineering Ltd., Arnprior, Ontario, Canada
Navigation Computer Corp., 121 Synder Ave., Philadelphia 45, Pa.
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
Radio City Products Co., Inc., Centre Glendale Sts., Easton, Pa.
Rank Cintel Ltd., Worsley Bridge Rd., London, S. E. 26, England
Rutherford Electronics Corp., 8944 Lindblade St., Culver City, Calif.
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Teletronics Laboratory, Inc., 54 Kinkel St., Westbury, N. Y.
Walkirt Co., The, 141 W. Hazel St., Inglewood 3, Calif.
Wang Laboratories Inc., 37 Hurley St., Cambridge 41, Mass.

GENERATORS—Van de Graaff

See ACCELERATORS

GLASS—High Density

Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
Andel & Co., Inc., 5218 N. Kedzie Ave., Chicago 25, Ill.
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
Bausch & Lomb Optical Co., 630 St. Paul St., Rochester 2, N. Y.
Chance-Pilkington Optical Works, Pilkington Brothers Ltd., St. Asaph, Flintshire, Great Britain
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
Eastman Kodak Co., 343 State St., Rochester 4, N. Y.
Fish-Schurman Corp., 75 Portman Rd., New Rochelle, N. Y.
General Lead Construction Corp., 1800 Harrison Ave., Kearny, N. J.
Hayward Scientific Glass Corp., 217 N. Magnolia Ave., Whittier, Calif.
PENBERTHY INSTRUMENT CO., HI-D DIV., 4301 6th Ave., S., Seattle 8, Wash. ADV. PG. 215
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
RAY-PROOF CORP., 843 Canal St., Stamford, Conn. ADV. PG. 272
Thompson Fiber Glass Co., H. I., 1733 Cordova St., Los Angeles 7, Calif.

GLASS—Radiation Resistant

Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
Bausch & Lomb Optical Co., 630 St. Paul St., Rochester 2, N. Y.
Chance-Pilkington Optical Works, Pilkington Brothers, Ltd., St. Asaph, Flintshire, Great Britain
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
Fish-Schurman Corp., 75 Portman Rd., New Rochelle, N. Y.
KOLLMORGEN OPTICAL CORP., 347 King St., Northampton, Mass. ADV. PG. 167
NRD Instrument Co., A Div. of Nuclear Corp. of American, 9842 Manchester St., St. Louis 19, Mo.
PENBERTHY INSTRUMENT CO., HI-D DIV., 4301 6th Ave., S., Seattle 8, Wash. ADV. PG. 215
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
RAY-PROOF CORP., 843 Canal St., Stamford, Conn. ADV. PG. 272

GLASS VIEWING WINDOWS

See WINDOWS—Shielding

GLASSWARE—Laboratory

Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
Bache & Co., Semon, 636 Greenwich St., New York 14, N. Y.
Baird & Tatlock (London) Ltd., Freshwater Rd., Chadwell Heath, Essex, England
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Clay-Adams, Inc., 141 E. 25th St., New York 10, N. Y.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Fish-Schurman Corp., 75 Portman Rd., New Rochelle, N. Y.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50, Pa.
H-B Instrument Co., American & Bristol Sts., Philadelphia 40, Pa.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Kahl Scientific Instrument Corp., P. O. Box 1166, El Cajon, Calif.
Kontes Glass Co., Dept. P—159, Vineland, N. J.
Laboratory Equipment Corp., St. Joseph, Mich.
Microchemical Specialty Co., 1834 University Ave., Berkeley 3, Calif.
Millipore Filter Corp., Bedford, Mass.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Pacific Nuclear Co., 5439 Geary Blvd., San Francisco 21, Calif.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Standard Scientific Supply Corp., 808 Broadway, New York 3, N. Y.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Thomas Co., Arthur A., Vine St. at Third, Box 779, Philadelphia 5, Pa.
Towers & Co., Ltd., J. W., Victoria House Widnes, Lancs., England
Townson & Mercer, Ltd., Croydon, Surrey, England
United States Testing Co., Inc., 1415 Park Ave., Hoboken, N. J.
Wakefield Industries, Inc., 5107 W. Grove St., Skokie, Ill.
Will Corporation, Wilco Place, Box 1050, Rochester 3, N. Y.

GLASS-WORKING APPARATUS

Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
American Gas Furnace Co., 130 Spring St., Elizabeth, N. J.
Associated Engineering & Mfg. Corp., Glen Ridge, N. J.
Atomic Laboratories, Berkeley, Calif.
Eberbach Corp., Ann Arbor, Mich.
Eisler Engineering Co., 760 S. 13th St., Newark 3, N. J.
Fish-Schurman Corp., 75 Portman Rd., New Rochelle, N. Y.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Litton Engineering Labs., P. O. Box 949, Grass Valley, Calif.
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Research Vacuum Supply Co., 6712 N. Clark St., Chicago, Ill.
Resitron Laboratories Inc., 2908 Nebraska Ave., Santa Monica, Calif.
White Dental Mfg. Co., S. S., 10 E. 40th St., New York 16, N. Y.

GLOVE BOXES

See DRY BOXES

GLOVES—Dry Box

Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
CHARLESTON RUBBER CO., 7 Stark Industrial Park, Charleston, S. C. ADV. PG. 75
Controlled Atmosphere Enclosures Mfg Co., 1061 E. 8th St., Jacksonville 6, Fla.
Duralab Equipment Corp., 980 Linwood St., Brooklyn 8, N. Y.
General Radiological Ltd., 15—18 Clipstone St., London, W. 1, England
General Scientific Equipment Co., 7516 Limelilh Pike, Philadelphia 50, Pa.
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
New Jersey Safety Equipment Co., Park Ave. at Garden State Pkwy, East Orange, N. J.
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey) England
Pionner Rubber Co., Tiffin Rd., Willard, Ohio
Scientific Engineering Laboratory, 1510 6th St., Berkeley 10, Calif.
Surety Rubber Co., N. High St., Carrollton, Ohio
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England

GRAPHITE

Acheson Colloids Co., Div. of Acheson Industries, Inc., 1631 Washington Ave., Port Huron, Mich.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Falls Industries, Inc., 31945 Aurora Rd., Solon, Ohio
Great Lakes Carbon Corp., 18 E. 48th St., New York, N. Y.
Huron Industries, P. O. Box 557, Port Huron, Mich.
NATIONAL CARBON CO., DIV. OF UNION CARBIDE CORP., 30 E 42nd St., New York 17, N. Y. ADV. PG. Fourth Cover
Speer Carbon Co., St. Marys, Pa.
United Carbon Products Co., Inc., P. O. Box 269, Bay City, Mich.
U. S. Graphite Co., Div. of The Wickes Corp., Holland Ave., Saginaw 5, Mich.

HEALTH PHYSICS DESIGN & PROCEDURES

See SERVICES

HEAT EXCHANGERS

Adams Co., Inc., R. P., 473 E. Park Drive, Buffalo 17, N. Y.
Adler's Metal Works, 1310 Germantown Ave., Philadelphia 22, Pa.
ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
American Air Filter Co., 215 Central Ave., Louisville 8, Ky.
American-Standard Ross Heat Exhanger Division, Box 2081, Buffalo 5, N. Y.
Arde Associates, 75 Austin St., Newark 2, N. J.
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
Babcock & Wilcox Ltd., Babcock House, 209 Eustron Rd., London N. W. 1, England
Blaw-Knox Co., 300 Sixth Ave., N.B., Pittsburgh 11, Pa.
CARBORUNDUM METALS CO., DIV OF THE CARBORUNDUM CO., P. O. Box 32, Akron, N. Y. ADV. PG. 54, 55
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Condenser Service & Engineering Co., Inc., 150 Observer Highway, Hoboken, N. J.
Consolidated Copper & Steel Industries, Alloy Farricators Div., 500 Market St., Perth Amboy, N. J.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
Croll-Reynolds Engineering Co., 17 John St., New York 38, N. Y.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Dorr-Oliver, Inc., Barry Place, Stamford, Conn.
Doyle & Roth Mfg. Co., Inc., 136—50 24th St., Brooklyn 32, N. Y.
Dunham-Bush, Inc., 179 South St., West Hartford 10 Conn.
Duriron Co., Inc., 450 N. Findlay St., Dayton 4, Ohio
Dynamic Instrument Co., Inc., 28 Carleton St., Cambridge, Mass.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave., Portland 10, Ore. ADV. PG. 175
Ellis & Watts Products, Inc., Monroe at Spencer, Cincinnati 36 (Rossmoyne), Ohio
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
General Alloys Co., 400 W. First St., Boston 27, Mass.
GRISCOM-RUSSELL CO., SUB. OF GENERAL PRECISION EQUIPMENT CORP., Massillon, Ohio ADV. PG. 98
Heatron, Inc., 333 Eberts Lane, York, Pa.
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany
Leader Iron Works, Inc., 2150 N. Jasper, Decatur, Ill.
Kearney Industries, Delanium Graphite Div., 134 Elmora Ave., Elizabeth, N. J.
Modine Mfg. Co., 1603 De Koven Ave., Racine, Wis.
NATIONAL CARBON CO., DIV. OF UNION CARBIDE CORP., 30 E. 42nd St., New York 17, N. Y. ADV. PG. Fourth Cover
New York Shipbuilding Corp., Camden, N. J.
Pacific Coast Engineering Co., Oak & Clements Sts., Alameda, Calif.
Pfaudler Co., The, A Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
Rempe Co., 334 N. Sacramento Blvd, Chicago 12, Ill.
Schutte & Koerting Co., Cornwell Heights, Bucks County, Pa.
Sethco Mfg. Co., 2293 Babylon Turnpike, Merrick, N. Y.
Smith Corp., A. O., 3533 N. 27th St., Milwaukee 1, Wis.
SOLAR AIRCRAFT CO., 2200 Pacific Highway, San Diego 12, Calif. ADV. PG. 143
Stewart Engineering Co., P. O. Box 277, Sequel, Calif.
Streed Products Corp., P. O. Box 447, Gasden, Ala.
Struthers-Wells Corp., Warren, Pa.
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England ADV. PG. 66
Tenney Engineering, Inc., 1090 Springfield Rd., Union, N. J.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Trane Co., The, LaCrosse, Wis.
Turbine Equipment Co., Hynes Electric Heating Div., Box 578, Westfield, N. J.
U. M. & F. Mfg. Co., 10929 Vanowen St., North Hollywood, Calif.
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
Vogt Machine Co., Henry, 1000 W. Ormsby St., Louisville, Ky.
Vulcan Electric Co., 88 Holten St., Danvers, Mass.
WHEELER MFG. CO., C. H., 19th & Lehigh Sts., Philadelphia 32, Pa. ADV. PG. 244
Willamette Iron & Steel Co., 2800 N. W. Front Ave., Portland 10, Ore.
Worthington Corp., Harrison, N. J.
York Corp., York, Pa.
Young Radiator Co., 709 S. Marquette St., Racine, Wis.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

HEATERS—Electric

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany

Acme Electric Heating Co., Inc., 1205 Washington St., Boston, Mass.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Ambory Corp., 21320 Stephenson, Hazel Park, Mich.
American Air Filter Co., 215 Central Ave., Louisville 8, Ky.
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
COLE ELECTRIC CO., 8439 Stellar Drive, Culver City, Calif. **ADV. PG. 193**
Cooper Co., D. C., 1467 S. Michigan Ave., Chicago, Ill.
CORNING GLASS WORKS, Corning, N. Y. **ADV. PG. 219**
Cox & Co., Inc., 115 E 23rd St., New York 10, N. Y.
Cutler-Hammer, Inc., 412 N. 12th St., Milwaukee 1, Wis.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. **ADV. PG. 37-39**
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Glas-Col Apparatus Co., 711 Hulman St., Terre Haute, Ind.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio **ADV. PG. 44**
Hevi-Duty Electric Co., 2040 W. Wisconsin Ave., Milwaukee 1, Wis.
Industrial Engineering & Equipment Co., 24 Hanley Industrial Court, St. Louis (Brentwood) 17, Mo.
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. **ADV. PG. 268**
Lyndon Brothers, Inc., 85 Zabriskie St., Hackensack, N. J.
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Modern Laboratory Equipment Co., Dept. N, 1809—11 First Ave., New York 28, N. Y.
PYRO-ELECTRIC, INC., 228 E. James St., Barrington.,Ill. **ADV. PG. 270**
Rockwell Co., W. S., 200 Eliot St., Fairfield, Conn.
Standard Scientific Supply Corp., 808 Broadway, New York 3, N. Y.
Syntron Co., 355 Lexington Ave., Homer Ity, Pa.
Teleweld Inc., 11535 Franklin St., Franklin Park, Ill.
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Thermo Electric Mfg. Co., 465 Huff St., Dubuque, Iowa
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England
Turbine Equipment Co., Hynes Electric Heating Div., Box 578, Westfield, N. J.
Vulcan Electric Co., 88 Holten St., Danvers, Mass.
Watlow Electric Mfg. Co., 1376 Ferguson Ave., St. Louis 14, Mo.
Wiegand Co., Edwin L., 7895 Thomas Blvd., Pittsburgh 8, Pa.
Will Corporation, Wilco Place, Box 1050, Rochester 3, N. Y.

HEATERS—Feed Water

ALCO PRODUCTS, INC., Schenectady 5, N. Y. **ADV. PG. 179**
American-Standard Ross Heat Exchanger Division, Box 2081, Buffalo 5, N. Y.
Condenser Service & Engineering Co., Inc., 150 Observer Highway, Hoboken, N. J.
Croll-Reynolds Engineering Co., 17 John St., New York 11, N. Y.
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
Graver Water Conditioner Co., 216 W. 14th St., New York 11, N. Y.
GRISCOM-RUSSELL CO., SUB. OF GENERAL PRECISION EQUIPMENT CORP., Massillon, Ohio **ADV. PG. 98**
Johnson Corp., 809 Wood St., Three Rivers, Mich.
New York Shipbuilding Corp., Camden, N. J.
Permutit Co., 50 W. 44th St., New York 36, N. Y.
Schutte & Koerting Co., Cornwell Heights, Bucks County, Pa.
Struthers-Wells Corp., Warren, Pa.
Vulcan Electric Co., 88 Holten St., Danvers, Mass.
Wiegand Co., Edwin L., 7895 Thomas Blvd., Pittsburgh 8, Pa.
Worthington Corp., Harrison, N. J.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

HEATERS—Immersion

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Acme Electric Heating Co., Inc., 1205 Washington St., Boston, Mass.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Ambory Corp., 21320 Stephenson, Hazel Park, Mich.
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
Central Scientific Co., 1700 Irving Park Rd., Chicago 13, Ill.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Cooper Co., D. C., 1467 S. Michigan Ave., Chicago, Ill.
Cutler-Hammer, Inc., 412 N. 12th St., Milwaukee 1, Wis.
Eclipse Fuel Engineering Co., 1100 Buchanan, Rockford, Ill.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. **ADV. PG. 37-39**
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio **ADV. PG. 44**
Hevi-Duty Electric Co., 2040 W. Wisconsin Ave., Milwaukee 1, Wis.
Modern Laboratory Equipment Co., Dept. N, 1809—11 First Ave., New York 28, N. Y.
NATIONAL CARBON CO., DIV. OF UNION CARBIDE CORP., 30 E. 42nd St., New York 17, N. Y. **ADV. PG. Fourth Cover**
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
PYRO-ELECTRIC, INC., 228 E. James St., Barrington, Ill. **ADV. PG. 270**
Selas Corp. of America, Dresher, Pa.
Surface Combustion Corp., 2375 Dorr St., Toledo 1, Ohio
Syntron Co., 355 Lexington Ave., Homer City, Pa.
Turbine Equipment Co., Hynes Electric Heating Div., Box 578, Westfield, N. J.
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
Vulcan Electric Co., 88 Holten St., Danvers, Mass.
Watlow Electric Mfg. Co., 1376 Ferguson Ave., St. Louis 14, Mo.
Wiegand Co., Edwin L., 7895 Thomas Blvd., Pittsburgh 8, Pa.

HEATERS—Induction

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. **ADV. PG. 84, 85**
Barker & Williamson, Inc., Canal & Beaver, Bristol, Pa.
English Electric Export & Trading Co., Ltd., 23/25 New York 4, N. Y.
Erdco Engineering Corp., Addison, Ill.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
GENERAL ELECTRIC CORP., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. **ADV. PG. 37-39**
General Electric Co. Ltd. of England, Mangnet House, Kingsway, London, W. C. 2
Laboratory Equipment Corp., St. Joseph, Mich.
Lindberg Engineering Co., 2450 W. Hubbard St., Chicago 12, Ill.
Marion Electrical Instrument Co., Grenier Field, Manchester, N. H.
Rockwell Co., W. S., 200 Eliot St., Fairfield, Conn.
Stewart Engineering Co., P. O. Box 277, Soquel, Calif.
Syntron Co., 355 Lexington Ave., Homer, Pa.

HEATERS—Infrared

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Acme Electric Heating Co., Inc., 1205 Washington St., Boston, Mass.
Cooper Co., D. C., 1467 S. Michigan Ave., Chicago, Ill.
CORNING GLASS WORKS, Corning, N. Y. **ADV. PG. 219**
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio **ADV. PG. 44**
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. **ADV. PG. 86**
Quartz Products Corp., 688 Somerse St., Plainfield, N. J.
Syntron Co., 355 Lexington Ave., Homer City, Pa.
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Vulcan Electric Co., 88 Holten St., Danvers, Mass.
Wiegand Co., Edwin L., 7895 Thomas Blvd., Pittsburgh 8, Pa.

HEATERS—Micro

See MICROCHEMICAL EQUIPMENT

HEAVY WATER

See WATER—Heavy

HOODS—Exhaust

See FUME HOODS

HOSE—Acid-Resisting

Aeroquip Corp., Jackson, Mich.
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Andrew Co., Otis, 231—233 W. Court St., Cincinnati 2, Ohio
Flexonics Corp., 1315 S. Third Ave., Maywood, Ill.
General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50, Pa.
Goodyear Tire & Rubber Co., Akron, Ohio
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio **ADV. PG. 44**
Republic Rubber Div. of Lee Rubber & Tire Corp., Youngstown, Ohio
Resistoflex Corp., Roseland, N. J.
Sethco Mfg. Co., 2293 Babylon Turnpike, Merrick, N. Y.
Sparta Mfg. Co., Div. of U. S. Ceramic Tile Co., Dover, Ohio
Stillman Rubber Co., 5811 Marilyn Ave., Culver City, Calif.
Titeflex, Inc., Hendee St., Springfield 4, Mass.
U. S. Gasket Co., Plastics Div. of The Garlock Packing Co., 600 N. 10th St., Camden 1, N. J.
U. S. Stoneware Co., Akron 9, Ohio
Vanton Pump & Equipment Corp., 201 Sweetland Ave., Hillside, N. J.
Weatherhead Co., The, 128 W. Washington Blvd., Fort Wayne, Ind.

HOSE—Metal, Flexible

Aeroquip Corp., Jackson, Mich.
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Ambory Corp., 21320 Stephenson, Hazel Park, Mich.
American Brass Co., Waterbury 20, Conn.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Andrew Co., Otis, 231—233 W. Court St., Cincinnati 2, Ohio
Flexaust Co., 100 Park Ave., New York 7, N. Y.
Flexonics Corp., 1315 S. Third Ave., Maywood, Ill.
Hallett Mfg. Co., 5910 Bowcraft St., Los Angeles 16, Calif.
Johnson Corp., 809 Wood St., Three Rivers, Mich.
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England **ADV. PG. 66**
Titeflex, Inc., Hendee St., Springfield 4, Mass.
ZALLEA BROTHERS, 800 Locust St., Wilmington, Del. **ADV. PG. 41**

HOSE—Plastic

Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Ambory Corp., 21320 Stephenson, Hazel Park, Mich.
Andrew Co., Otis, 231—233 W. Court St., Cincinnati 2, Ohio
Borden Chemical Co., A Div. of the Borden Co., 350 Madison Ave., New York 17, N. Y.
Clay-Adams, Inc., 141 E. 25th St., New York 10, N. Y.
CONNEAUT RUBBER & PLASTIC CO., DIV. OF U. S. STONEWARE CO., Commerce St., Conneaut, Ohio **ADV. PG. 97**
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Flexaust Co., 100 Park Ave., New York 7, N. Y.
Flexonics Corp., 1315 S. Third Ave., Maywood, Ill.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio **ADV. PG. 44**
Haveg Industries, Inc., Halocarbon Div., 950 Greenbank Rd., Wilmington 8, Del.
Industrial Plastic Fabricators, Endicott St., Norwood, Mass.
Polymer Corp., The, Reading, Pa.
Resistoflex Corp., Roseland, N. J.
Rex Corp., The, Hayward Rd., West Acton, Mass.
Sethco Mfg. Co., 2293 Babylon Turnpike, Merrick, N. Y.
Shamban & Co., W. S., 11617 W. Jefferson Blvd., Culver City, Calif.
Sparta Mfg. Co., Div. of U. S. Ceramic Tile Co., Dover, Ohio
Stillman Rubber Co., 5811 Marilyn Ave., Culver City Calif.
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England **ADV. PG. 66**
Titeflex, Inc., Hendee St., Springfield 4, Mass.
U. S. Gasket Co., Plastics Div. of the Garlock Packing Co., 600 N. 10th St., Camden 1, N. J.
U. S. Stoneware Co., Akron 9, Ohio
Vanton Pump & Equipment Corp., 201 Sweetland Ave., Hillside, N. J.
Weatherhead Co., The, 128 W. Washington Blvd., Fort Wayne, Ind.

HOT LABORATORIES—Nuclear

AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
AMERAY CORP., 25 Route #46, Kenvil, N. J. **ADV. PG. 30**
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. **ADV. PG. 237**
Austin Co., The, 16112 Euclid Ave., Cleveland 12, Ohio
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. **ADV. PG. 181**
Farrel Birmingham Co., Inc., Ansonia, Conn.
Garde Mfg. Co., 588 Eddy St., Providence 3, R. I.
GENERAL ATOMIC DIV. OF GENERAL DYNAMICS CORP., P. O. Box 608, San Diego 12, Calif. **ADV. PG. 83**

Harty Co., Inc., R. V., 1433 Sloman Ave., Detroit 11, Mich.
Heraeus GmbH., W. C., 12—14 Heraeusstr., Hanau, Germany
KELLEY & CO., O. G., 98 Taylor St., Dorchester Mass. ADV. PG. 64, 65
Metalab Equipment Co., Div. of Norbute Corp., 282 Duffy Ave., Hicksville, N. Y.
RAY-PROOF CORP., 843 Canal St., Stamford, Conn. ADV. PG. 272

HOUSINGS—Metal

See CONSOLES and CABINETS

HYDRAULIC MECHANISMS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
American Blower Div., American Radiator & Standard Corp., 8111 Tireman Ave., Dearborn, Mich.
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
Atlas Valve Co., 280 South St., Newark 5, N. J.
BENDIX AVIATION CORP., BENDIX-PACIFIC DIV., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Blach Industries, Inc., 10 Indian Spring Rd., Cranford, N. J.
CANADAIR LTD., P. O. Box 6087, Montreal, Que., Canada ADV. PG. 185
Carpenter Mfg. Corp., 6723 Denison Ave., Cleveland 2, Ohio
Carter Controls, Inc., 2800 Bernice Rd., Lansing, Mich.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Cooper Co., D. C., 1467 S. Michigan Ave., Chicago, Ill.
Dalmo Victor Co., Div. of Textron Inc., 1515 Industrial Way, Belmont, Calif.
Denison Engineering Div., American Brake Shoe Co., 1160 Dublin Rd., Columbus 16, Ohio
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Elliott Brothers (London), Ltd., Lewisham Century Works, London, S. E. 13, England
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
FORD INSTRUMENT CO., DIV. OF SPERRY-RAND CORP. 31-10 Thomson Ave., Long Island City 1, N. Y. ADV PG. 183
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
General Nuclear Corp., 550 Fifth Ave., New York 26, N. Y.
General Regulator Corp., 666 Fifth Ave., New York 19, N. Y.
Greer Hydraulics, Inc., International Airport, Jamaica 30, N. Y.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Hanna Engineering Works, 1767 N. Elston Ave., Chicago 22, Ill.
Hydel, Inc., 99 First St., Cambridge 41, Mass.
Industrial Engineering Corp., 525 E. Woodbine, Louisville, Ky.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Kearfott Co., Inc., Engineering & Sales Div., 1378 Main Ave., Clifton, N. J.
L & S Machine Co., Inc., P. O. Box 317, R. D. #2, Latrobe, Pa.
LOMA MACHINE MFG. CO., INC., 114 E. 32nd St., New York, N. Y. ADV. PG. 235
Menasco Mfg. Co., 805 S. San Fernando Blvd., Burbank, Calif.
Muirhead & Co., Ltd., Beckenham, Kent, England
Oilgear Co., The, 16th & Pierce, Milwaukee 1, Wis.
Precision Methods & Machine, Inc., Cumberland Drive, Waterbury, Conn.
Sunstrand-Turbo Div. of Sunstrand Machine Tool, Pacoima, Calif.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Trimount Instrument Co., 3119 W. Lake St., Chicago 12, Ill.
Trio Machine Works, Inc., 3045 N. 3rd St., Philadelphia 33, Pa.
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
Vickers Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
Wagner Electric Co., 6400 Plymouth Ave., St. Louis 14, Mo.
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.

HYGROMETERS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Abbeon Supply Co., 179—15 Jamaica Ave., Jamaica 32, N. Y.
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
Beckman/Scientific & Process Instruments Div., Beckman Instruments, Inc., 2500 Fullerton Rd., Fullerton, Calif.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Elliott Brothers (London), Ltd., Century Works, Lewisham, London, S. E. 13, England
El-Tronics, Inc., Suburban Station Bldg., Philadelphia, Pa.
Fisher Scientific Co. 709 Forbes St., Pittsburgh 19, Pa.
FRIEZ INSTRUMENT DIV., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
General Scientific Equipment Co., 7516 Limeklin Pike, Philadelphia 50, Pa.
H-B Instrument Co., American & Bristol Sts., Philadelphia 40, Pa.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Hill & Co., E. Vernon, P. O. Box 189, Lake Geneva, Wis.
Illinois Testing Labs., 420 N. LaSalle St., Chicago, Ill.
Kahl Scientific Instrument Corp., P. O. Box 1166, El Cajon, Calif.
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.
Minneapolis-Honeywell Regulator Co., Industrial Div. Wayne & Windrim Aves., Philadelphia 44, Pa.
Negretti & Zambra, Ltd., 122 Regent St., London, W. 1, England
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn, N. Y.
Powers Regulator Co., The, 3400 Oakton St., Skokie 81, Ill.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Science Associates, Box 216, 194 Nassau St., Princeton, N. J.
Serdex, Inc., 12 Bowdoin Square, Boston 14, Mass.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.

INDICATORS

See CONTROLS
DETECTORS
GAGES
METERS

INDICATORS—Control Rod Position

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bourns Laboratories, Inc., 6135 Magnolia Blvd., Riverside, Calif.
Collins Corp., G. L., 2820 Hullett St., Long Beach, Calif.
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Digitran Co., The, 45 W. Union St., Pasadena, Calif.
Edcliff Instruments, Inc., 1711 S. Mountain Ave., Monrovia, Calif.
Electric Tachometer Corp., 68th & Upland Sts., Philadelphia 42, Pa.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
FORD INSTRUMENT CO., DIV. OF SPERRY-RAND CORP., 31—10 Thomson Ave., Long Island 1, N. Y. ADV. PG. 183
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Gems Co., P. O. Box 222, Newington, Conn.
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Regulator Corp., 666 Fifth Ave., New York 19, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Peerless Instrument Co., Inc., 90—15 Corona Ave., Elmhurst 73, N. Y.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Vard, Inc., 2981 E. Colorado St., Pasadena 8, Calif.
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Wang Laboratories, Inc., 37 Hurley St., Cambridge 41, Mass.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

INDICATORS—Flow

See METERS—Flow

INDICATORS—Liquid Level

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Acoustica Associates, Inc., 26 Windsor Rd., Mineola, N. Y.
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio ADV. PG. 230
Automatic Timing & Controls, Inc., King of Prussia, Pa.
B-I-F Industries, Inc., 530-D Harris Ave., Providence 1, R. I.
B/W Controller Corp., 2200 E. Maple Rd., Birmingham, Mich.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
Barton Instrument Corp., 580 S. Monterey Pass Rd., Monterey Park, Calif.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Brooks Rotameter Co., Box 432, Lansdale, Pa.
Collins Corp., G. L., 2820 Hullett St., Long Beach, Calif.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Electronic Control Corp., 1573 E. Forest Ave., Detroit 7, Mich.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Fielden Electronics, Ltd., Paston RD., Whytenshawe, Manchester, England
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Gems Co., P. O. Box 222, Newington, Conn.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Haledy Electronics Co., 57 William St., New York 5, N. Y.
Hays Corp., Michigan City 40, Ind.
Instruments, Inc., 122 N. Madison, P. O. Box 556, Tulsa, Okla.
ISOTOPE DEVELOPMENTS, LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
Jerguson Gage & Valve Co., Adams St., Burlington, Mass.
LIQUID METALS, INC., Box 266, Westford, Mass. ADV. PG. 233
Magnetic Instruments Co., Inc., 546 Commerce St., Thornwood, N. Y.
MAGNETROL, INC., 2115 S. Marshall Blvd., Chicago 23, Ill. ADV. PG. 222
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
NARDA ULTRASONICS CORP., Dept. NBG, 625 Main St., Westbury, N. Y. ADV. PG. 113
Negretti & Zambra Ltd., 122 Regent St., London, W. 1, England
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 1, N. Y.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 48
Nuclear Research Corp., Southampton, Pa.
Ohmart Corp., 2236 Beaver St., P. O. Box 67, Sta. B, Cincinnati 22, Ohio
Photobell Co., Inc., 43 Vesey St., New York 7, N. Y.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
Revere Corp. of America, Wallingford, Conn.
Robertshaw-Fulton Controls Co., Aeronautical & Instrument Div., Santa Ana Freeway at Euclid Ave., Anaheim, Calif.
Simmonds Aerocessories, Inc., 105 White Plains Rd., Tarrytown, N. Y.
Simplex Valve & Meter Co., 7 E. Orange St., Lancaster, Pa.
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England

Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Trimount Instrument Co., 3119 W. Lake St., Chicago 12, Ill.
Victory Engineering Corp., 77 Springfield Rd., Union, N. J.
Wallace & Tiernan, Inc., 25 Main St., Belleville 9, N. J.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10
Yarnall-Waring Co., Chestnut Hill, Philadelphia 18, Pa.

INDICATORS—Plugging

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Gems Co., P. O. Box 222, Newington, Conn.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
M S A Research Corp., Callery, Pa.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—30

INDICATORS—Radiation

See CHAMBERS, Ionization; COUNTERS; SCALERS etc.

INDICATORS—Timing

See TIMERS

INDICATORS—Valve Position

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
ALLIS-CHALMERS MFG., CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
B-I-F Industries, Inc., 530-D Harris Ave., Providence 1, R. I.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Collins Corp., G. L., 2820 Hullett St., Long Beach, Calif.
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Digitran Co., The, 45 W. Union St., Pasadena, Calif.
Electric Tachometer Corp., 68th & Upland Sts., Philadelphia 42, Pa.
Elliott Brothers (London) Ltd., Century Works, Lewisham London, S. E. 13, England
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Gems Co., P. O. Box 222, Newington, Conn.
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
General Regulator Corp., 666 Fifth Ave., New York 19, N. Y.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
Peerless Instrument Co., Inc., 90—15 Corona Ave., Elmhurst 73, N. Y.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Vard, Inc., 2981 E. Colorado St., Pasadena 8, Calif.
Wagner Electric Co., 6400 Plymouth Ave., St. Louis 14, Mo.
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Wang Laboratories, Inc., 37 Hurley St., Cambridge 41, Mass.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10

INDUCTANCES

See COILS

INSTRUMENT PARTS—Precision

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Abrams Instrument Corp., 600—620 E. Shiawassee St., Lansing, Mich.
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
BALL BROTHERS RESEARCH CORP., Industrial Park, Boulder, Colo. ADV PG. 74
Barnes Development Co., 213 W. Baltimore Pike, Lansdowne, Pa.
Bourns Laboratories, Inc., 6135 Magnolia Blvd., Riverside, Calif.
Bowmar Instrument Corp., 8000 Bluffton Rd., Fort Wayne, Ind.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Buhl Optical Co., 1009 Beech Ave., Pittsburgh 33, Pa.
Burndept Ltd., West St., Erith, Kent, U. K.
Edcliff Instruments, Inc., 1711 S. Mountain Ave., Monrovia Calif.
Edison Industries, Thomas A., Instrument Div., West Orange, N. J.
Eichner Instruments Co., L. C., 19 Sebago St., Clifton, N. J.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Electro Measurements, Inc., 7524 SW Macadam Ave., Portland, Ore.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
Elm Laboratories, 10 Washington Ave., Hastings-on-Hudson, N. Y.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Garde Mfg. Co., 588 Eddy St., Providence 3, R. I.
Graflex, Inc., 3800 Monroe Ave., Rochester, N. Y.
Harriss (Engineers) Granta Terrace, Stapleford, Cambridge, England
Kearfott Co., Inc., Engineering & Sales Div., 1378 Main Ave., Clifton, N. J.
LaVezzi Machine Works, 4635 W. Lake St., Chicago 44, Ill.
Leland Instruments, Ltd., 22—23 Millbank, London, Westminster, S. W. 1, England
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Link Aviatin, Inc., Binghamton, N. Y.
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Muirhead & Co., Ltd., Beckenham, Kent, England
Ney Co., J. M., Drawer 990, Hartford Conn.
Norwood Controls Unit Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
Nuclear Science Associates, 55 Manor Drive, Newark 6, N. J.
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
Parsons Co., Ralph M., 617 W. Seventh St., Los Angeles 17, Calif.
Partlow Corp., The, Dept. NBG-58, New Hartford, N. Y.
Peerless Instrument Co., Inc., 90—15 Corona Ave., Elmhurst 73, N. Y.
Perkin Engineering Corp., 345 Kansas St., El Segundo, Calif.
Phoenix Precision Instrument Co., 3803-05 N. Fifth St., Philadelphia, Pa.
Precision Methods & Machine, Inc., Cumberland Drive, Waterbury, Conn.
Research Development Manufacture, Inc., 429 E. Collom St., Philadelphia 44, Pa.
SHEFFIELD CORP., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Thomas Instrument Co., Phoenix, N. Y.
Tinsley Laboratories, Inc., 2526 Grove St., Berkeley 4, Calif.
Trimount Instrument Co., 3119 W. Lake St., Chicago 12, Ill.
Wallace & Tiernan, Inc., 25 Main St., Belleville 9, N. J.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.

INSULATION—Thermal

Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Armstrong Cork Co., Lancaster, Pa.
Auburn Mfg. Co., The, 500 Stack St., Middletown, Conn.
BABCOCK & WILCOX CO. THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
Carborundum Co., The, Refractories Div., Perth Amboy, N. J.
Dow Chemical Co. Midland, Mich.
Dow Corning Corp., Midland, Mich.
Du-Co Ceramics Co., Box 587, Butler 8, Pa.
Eagle-Picher Co., Cincinnati, Ohio
Earl Paint Corp., 5520 S. Shore Drive, Chicago 37, Ill.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Emerson & Cuming, Inc., 869 Washington St., Canton, Mass.
Gordon Co., Claud S., 619 W. 30th St., Chicago 16, Ill.
Houghton Laboratories, Inc., Houghton Ave., Olean, N. Y.
Johns-Manville, 22 E. 40th St., New York 16, N. Y.
L. O. F. Glass Fibers Co., 1810 Madison Ave., Toledo 1, Ohio
Mica Insulator Div. of Minnesota Mining & Mfg. Co., 797 Broadway, Schenectady 1, N. Y.
National Vulcanized Fibre Co., Wilmington 99, Del.
NORTON CO., 1 New Bond St., Worcester 6, Mass. ADV. PG. 77
Pittsburgh Coke & Chemical, Protective Coatings Div., Grant Bldg., Pittsburgh 19, Pa.
Precision Coating Co., Inc., 37 Franklin St., Needham Heights 94, Mass.
Raybestos-Manhattan, Inc., 75 E. Main St., Stratford, Conn.
Rex Corp., The, Hayward Rd. West Acton, Mass.
Sauereisen Cements Co., Sauereisen Bldg., Pittsburgh 15, Pa.
Steward Mfg. Co., D. M., E. 36th St., Chattanooga 1, Tenn.
Thermal Refractories Corp., 4501 Dell Ave., North Bergen, N. J.
Thompson Fiber Glass Co., H. I., 1733 Cordova St., Los Angeles 7, Calif.
Wood & Co., Charles S., 88 Main St., West Orange, N. J.
Zipcortubing, Inc., 752 S. San Pedro St., Los Angeles 14, Calif.

INSULATORS & INSULATION—Electrical

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Alite Div. of U. S. Stoneware Co., P. O. Box 119, Orville, Ohio
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
American Lava Corp., Titanla Div., Manufacturers Rd., Chattanooga 5, Tenn.
Anchor Plastics Co., Inc., 36—36 36th St., Long Island City 6, N. Y.
Armstrong Cork Co., Lancaster, Pa.
Asheville-Schoonmaker Mica Co., Inc., 900 Jefferson Ave., Newport News, Va.
Auburn Mfg. Co., The, 500 Stack St., Middletown, Conn.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Carborundum Co., The, Refractories Div., Perth Amboy, N. J.
Centralab Division of Globe-Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.
Connecticut Hard Rubber Co., New Haven 9, Conn.
Continental-Diamond Fibre Corp., Newark, Del.
Dow Corning Corp., Midland, Mich.
Du-Co Ceramics Co., Box 587, Butler 8, Pa.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Electro Technical Products Div. of Sun Chemical Corp., 113 E. Centre St., Nutley, N. J.
Electronic Mechanics, Inc., 101 Clifton Blvd., Clifton, N. J.
Emerson & Cuming, Inc., 869 Washington St., Canton, Mass.
Emerson Plastics Corp., 1383 Seabury Ave., Bronx 61, N. Y.
Frenchtown Porcelain Co., Frenchtown, N. J.
Garde Mfg. Co., 588 Eddy St., Providence 3, R. I.
General Ceramics Corp., 250 Crows Mill Rd., Keasbey, N. J.
General Electric Co., Laminated Products Dept., Coshocton, Ohio
Houghton Laboratories, Inc., Houghton Ave., Olean, N. Y.
Isolantite Mfg. Corp., Stirling, N. J.
Johns-Manville, 22 E. 40th St., New York, 16, N. Y.
Johnson Co., E. F., Waseca, Minn.
Kirchberger & Co., Inc., M., 82—92 W. Forest Ave., Englewood N. J.
Mica Insulator Div. of Minnesota Mining & Mfg. Co., 797 Broadway, Schenectady 1, N. Y.
Micanite & Insulators Co., Ltd., The, Blackhorse Lane, Walthamstow, London, E. 17, England
Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.
Minnesota Mining & Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.
Minnesota Mining & Mfg. Co., Jersey City Chemical Div., 75 Droyers St., Jersey City 3, N. J.
Mycalex Corp. of America, Clifton Blvd., Clifton, N. J.
National Vulcanized Fibre Co., Wilmington 99, Del.
NORTON CO., 1 New Bond St., Worcester 6, Mass. ADV. PG. 77
Penn Fibre & Specialty Co., 2020 E. Westmoreland St., Philadelphia 34, Pa.
Polymer Corp., The, Reading, Pa.
Raybestos-Manhattan, Inc., 75 E. Main St., Stratford, Conn.
Resdel Corp., P. O. Box 217, Rio Grande, N. J.
Rex Corp., The, Hayward Rd., West Acton, Mass.
Richardson Co. The, 2775 Lake St., Melrose Park, Ill.
Sparta Mfg. Co. Div. of U. S. Ceramic Tile Co., Dover, Ohio
Spaulding Fibre Co., Inc., 310 Wheeler St., Tonawanda, N. Y.
Steward Mfg. Co., D. M., E. 36th St., Chattanooga 1, Tenn.
Synthane Corp., River Rd., Oaks, Pa.
Thompson Fibre Glass Co., H. I., 1733 Cordova St., Los Angeles 7, Calif.
Thompson Products, Inc., Staff Research & Development New Devices Dept., 7209 Platt Ave., Cleveland 4, Ohio

U. S. Gasket Co., Plastics Div. of The Garlock Packing Co., 600 N. 10th St., Camden 1, N. J.
U. S. Stoneware Co., Akron 9, Ohio
Zippertubing, Inc., 752 S. San Pedro St., Los Angeles 14, Calif.
Zophar Mills, Inc., 112—130 26th St., Brooklyn 32, N. Y.

ION EXCHANGE EQUIPMENT

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
Atomic Energy Waste Disposal Service, 5410 Bond St., Oakland, Cal.
BARNSTEAD STILL & STERILIZER CO., 84 Lanesville Terrace, Boston 31, Mass. ADV. PG. 227
Bio-Rad Laboratories, 1257 S. 32nd St., Richmond, Calif.
Chemical Process Co., Redwood City, Calif.
Chem-Pure Service Co., 762 Industrial Rd., San Carlos, Calif.
Consolidated Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Cuno Engineering Corp., 80 S. Vine St., Meriden, Conn.
Elgin Softener Corp., 179 S. Grove Ave., Elgin, Ill.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Graver Water Conditioner Co., 216 W. 14th St., New York 11, N. Y.
Illinois Water Treatment Co., 840 Cedar St., Rockford, Ill.
Infilco, Inc., P. O. Box 5033, Tucson, Ariz.
Ionics, Inc., 152 6th St., Cambridge 42, Mass.
KELLEY & CO. O. G., 98 Taylor St., Dorchester, Mass. ADV. PG. 64, 65
Ledoux & Co., 359 Alfred Ave., Teaneck, N. J.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Permutit Co., 50 W. 44th St., New York 36, N. Y.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54 Mass. ADV. PG. 151, 152, 157
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203

ION—GAUGE TUBES

See GAGES—Vacuum

IONIZATION CHAMBERS

See CHAMBERS—Ionization

IRRADIATION—Accelerator

See SERVICES

IRRADIATION—Isotopic

See SERVICES

IRRADIATION—Reactor

See SERVICES

IRRADIATORS—Medical

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Cal. ADV. PG. 100, 101
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada. ADV. PG. 155
BAR-RAY PRODUCTS, INC., 205 25th St., Brooklyn 32, N. Y. ADV. PG. 103
BUDD CO., NUCLEAR SYSTEMS DIV., 2950 Roberts Ave., Philadelphia 32, Pa. ADV. PG. 187
Canadian Radium & Uranium Corp., 630 Fifth Ave., New York 20, N. Y.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
Knapp Mills, Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
Nuclear Engineering Ltd., Woolwich Rd., London S. E. 7, England
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey) England
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35
RADIUM CHEMICAL CO., 161 E. 42nd St., New York 17, N. Y. ADV. PG. 241

IRRADIATORS—Process

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
Andel & Co., Inc., 5218 N. Kedzie Ave., Chicago 25, Ill.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada ADV. PG. 155
BAR-RAY PRODUCTS INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
ISOTOPES SPECIALTIES CO. 170 W. Providencia, Burbank, Cal. ADV. PG. 158, 229
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 1, N. Y.
Nuclear Engineering Ltd., Woolwich Rd., London S. E. 7, England
Nuclear Enterprises (G.B.) Ltd., Sighthill, Edinburgh, Scotland
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35
RADIATION APPLICATIONS INC., 370 Lexington Ave., New York 17, N. Y. ADV. PG. 238
Radiation Dynamics Inc., Westbury Industrial Park, Westbury, N. Y.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio

ISOTOPE-LABELED COMPOUNDS

Abbott Laboratories, Oak Ridge, Tenn.
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada. ADV. PG. 155
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Bio-Rad Laboratories, 1257 S. 32nd St., Richmond, Calif.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
ISOMET CORP. 118 Union St., Palisades Park, N. J. ADV. PG. 232
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
Merck & Co. Ltd., Research Chemicals Dept., 560 De Courcelle St., Montreal 3, P.Q., Canada
NEW ENGLAND NUCLEAR CORP., 575 Albany Boston 18 Mass ADV. PG. 233
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V. Eindhoven, Holland ADV. PG. 86
Radiochemical Centre, The, Amersham, Buckinghamshire, England
RADIOCHEMISTRY, INC., 1111 W. St. Catherine St, Louisville 0, Ky. ADV. PG. 242
Research Specialties Co., 200 S. Garrard Blvd., Richmond, Calif.
Schwarz Laboratories, Inc., 230 Washington St., Mt. Vernon, N. Y.
Texas Research Foundation, Renner, Texas
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 57
Twentieth Century Electronics Ltd., Centronics Works, New Addington, Croydon, Surrey, England
Volk Radiochemical Co., 542 N. Clark St., Chicago 40, Ill.

ISOTOPES—Radioactive

Abbott Laboratories, Oak Ridge, Tenn.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Aeronutronic Systems, Inc., 1234 Air Way, Glendale Calif.
American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada ADV. PG. 155
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Baker & Adamson Products, General Chemical Div. of Allied Chemical Corp., 40 Rector St., New York 6, N. Y.
Bio-Rad Laboratories, 1257 S. 32nd St., Richmond, Calif.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
BUDD CO., NUCLEAR SYSTEMS DIV., 2950 Roberts Ave., Philadelphia 32, Pa. ADV. PG. 187
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
Falk & Co., Ltd., M., Emefco House, Bell St., Reigate (Surrey), England
Fleischman, Burd & Co. Inc., 22 W. 48th St., New York 36, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
Instruments, Inc., 122 N. Madison, P. O. Box 556, Tulsa, Okla.
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
Merck & Co., Inc., Chemical Div., 126 E. Lincoln Ave., Rahway, N. J.
Merck & Co., Ltd. Research Chemicals Dept., 560 De Courcelle St., Montreal 3, P. Q., Canada
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NEW ENGLAND NUCLEAR CORP. 575 Albany St. Boston 18, Mass. ADV. PG. 233
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Radiochemical Centre, The, Amersham, Buckinghamshire, England
Texas Research Foundation, Renner, Texas
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
UNITED STATES RADIUM CORP., P. O. Box 246, Morristown, N. J. ADV. PG. 223
Volk Radiochemical Co., 5412 N. Clark St., Chicago 40, Ill.
Western Radiation Lab., 110 7 W. 24th St., Los Angeles 7, Calif.

ISOTOPES—Stable

Abbott Laboratories, Oak Ridge, Tenn.
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada ADV. PG. 155
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Baker & Adamson Products, General Chemical Div. of Allied Chemical Corp., 40 Rector St., New York 6, N. Y.
Bio-Rad Laboratories, 125 7 S. 32nd St., Richmond, Calif.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Dalac Laboratories, The Bordan Co., Chemical Div., Leominster, Mass.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
ISOMET CORP., 118 Union St., Palisades Park, N. J. ADV. PG. 232
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
Merck & Co., Ltd. Research Chemicals Dept., 560 De Courcelle St., Montreal 3, P. Q., Canada
Quartz & Silice, 8 rue d'Anjou, Paris, France
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54 Mass. ADV. PG. 151, 152, 157
Twentieth Century Electronics Ltd., Centronics Works, King Henry's Drive, New Addington, Surrey, England
Volk Radiochemical Co., 5412 N. Clark St., Chicago 40, Ill.

ISOTOPES—Standards

See RADIOACTIVITY STANDARDS

LABORATORY APPARATUS

See Also Specific Headings

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Allied Engineering & Production Corp., 242 Blandling Ave., Alameda, Calif.
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
American Agile Corp., P. O. Box 168, Bedford, Ohio
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
American Optical Co., Instrument Div., Box A, Buffalo 15, N. Y.
Atomic Laboratories, Berkeley, Calif.
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Baird & Tatlock (London) Ltd., Freshwater Rd., Chadwell Heath, Essex, England
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
BARNSTEAD STILL & STERILIZER CO., 84 Lanesville Terrace, Boston 31, Mass. ADV. PG. 227
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.

Bishop & Co., J., Platinum Works, Malvern, Pa.
Boonton Radio Corp., Boonton, N. J.
Buehler, Ltd., 2120 Greenwood St., Evanston, Ill.
Burke & James, Inc., 321 S. Wabash, Chicago, Ill.
Burndept Ltd. West St., Erith, Kent, U. K.
Burrell Corp., 2223 Fifth Ave., Pittsburgh 19, Pa.
Central Scientific Co., 1700 Irving Park Rd., Chicago 13, Ill.
Chandler & Stedman, 398 Newton St., Waltham 54, Mass.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Clay-Adams, Inc., 141 E. 25th St., New York 10, N. Y.
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Corley Co., Inc., 103 E. Main St., Plainville, Conn.
Custom Scientific Instruments, Inc., P. O. Box 170, Kearny N. J.
Division Lead Co., 742 W. 61st Place, Summit, Ill.
DuMont Labs., Inc., Allen B., 760 Bloomfield Ave., Clifton, N. J.
Duralab Equipment Corp., 980 Linwood St., Brooklyn 8, N. Y.
Eberbach Corp., Ann Arbor, Mich.
Electro Measurements, Inc., 7524 SW Macadam Ave., Portland, Ore.
Elliott Brothers, (London) Ltd., Lewisham Century Works, London, S. E. 13, England
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Fisher Scientic Co., 709 Forbes St., Pittsburgh 19, Pa.
Fish-Schurman Corp., 75 Portman Rd., New Rochelle, N. Y.
Gaertner Scientific orp., 1237 Wrightwood Ave., Chicago, Ill.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
GENERAL ATOMIC DIV. OF GENERAL DYNAMICS CORP. P. O. Box 608, San Diego 12, Calif. ADV. PG. 89
General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50, Pa.
Harriss (Engineers), Granta Terrace, Stapleford, Cambridge, England
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Hill & Co., E. Vernon, P. O. Box 189, Lake Geneva, Wis.
Industrial Plastic Fabricators, Endicott St., Norwood, Mass.
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes N. J. ADV. PG. 268
Knopp Inc., 1307 66th St., Emeryville 8, Calif.
KOLLMORGEN OPTICAL CORP., 347 King St., Northampton, Mass. ADV. PG. 167
Kontes Glass Co., Dept. P-159, Vineland, N. J.
Laboratory Equipment Corp., St. Joseph, Mich.
LaPine & Co., Arthur S., 6001 S. Knox Ave., Chicago 29, Ill.
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
LOMA MACHINE MFG. CO., INC., 114 E. 32nd St., New York, N. Y. ADV. PG. 235
McKenna Laboratories, 2503 Main St., Santa Monica, Calif.
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N. Y.
Mico Instrument Co., 82 S. Trowbridge St., Cambridge 39, Mass.
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Millipore Filter Corp., Bedford, Mass.
N. J. E. Corp., 345 Carnegie Ave., Kenilworth, N. J.
Neutronics Research Co., 165 Lake St., Waltham, Mass.
NORTON CO., 1 New Bond St., Worcester 6, Mass. ADV. PG. 77
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17 N. Y.
NUCLEAR MATERIALS & EQUIPMENT CORP., 680 Warren Ave., Apollo, Pa. ADV. PG. 163
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn, N. Y.
Pall Filtration Co., 30 Sea Cliff Ave., Glen Cove, N. Y.
Perkin-Elmer Corp., Main Ave., Norwalk, Conn.
Phoenix Precision Instrument Co., 3803—05 N. 5th St., Philadelphia, Pa.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Research Vacuum Supply Co., 6712 N. Clark St., Chicago, Ill.
Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Standard Scientific Supply Corp., 808 Broadway, New York 3, N. Y.
Sturtevant Mill Co., Park & Clayton Sts., Boston 22, Mass.
Technique Associates, 1413 Cornell Ave., Indianapolis, Ind.
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Thermo Electric Mfg. Co., 465 Huff St., Dubuque, Iowa
Thomas Co., Arthur H., Vine St. at Third, Box 779, Philadelphia 5, Pa.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England
Townson & Mercer, Ltd., Croydon, Surrey, England
Tri-R Instruments, 144—13 Jamaica Ave., Jamaica 35, N. Y.
Trop-Artic, Inc., 3000 S. Hackley St., Muncie, Ind.
United States Testing Co., Inc., 1415 Park Ave., Hoboken, N. J.
Volk Radiochemical Co., 5412 N. Clark St., Chicago 40, Ill.
Wakefield Industries, Inc., 5107 W. Grove St., Skokie, Ill.
Wiegand Co., Edwin L., 7895 Thomas Blvd., Pittsburgh 8, Pa.
Will Corporation, Wilco Place, Box 1050, Rochester 3, N.Y.
Winslow Co., Inc., 705 Lehigh Ave., P. O. Box 394, Union, N. J.

LABORATORY ROLLING MILLS

See MILLS—Rolling

LAUNDRY EQUIPMENT FOR CONTAMINATED CLOTHING

AMERICAN LAUNDRY MACHINERY CO., Norwood 12, Ohio ADV. PG. 224

LAUNDRY SERVICE FOR CONTAMINATED CLOTHING

See SERVICES

LEAK TESTERS

See DETECTORS—Leak

LEAK TESTING

See SERVICES

LIGHT SOURCE—Radioactive

ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Cambridge Thermionic Corp., 445 Concord Ave., Cambridge 38, Mass.
Canadian Radium & Uranium Corp., 630 Fifth Ave., New York 20, N. Y.
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
NEW ENGLAND NUCLEAR CORP., 575 Albany St., Boston, Mass. ADV. PG. 233
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
UNITED STATES RADIUM CORP., P. O. Box 246, Morristown, N. J. ADV. PG. 223

LIGHTING EQUPMENT—Underwater & Hot Cell

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.

LIQUEFIERS—Gas

See CRYOGENIC APPARATUS

LOOPS—Test

ACF INDUSTRIES, INC., NUCLEAR PRODUCTS-ERCO DIV., 508 Kennedy St., N. W., Washington 11, D. C. ADV. PG. 43
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
ATWOOD & MORRILL CO., Salem, Mass. ADV. PG. 204
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
Babcock & Wilcox Ltd., Babcock House, 209 Euston Rd., London N. W. 1, England
CANADAIR LTD., P. O. Box 6987, Montreal, Que., Canada ADV. PG. 185
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany
KELLEY & CO., O. G., 98 Taylor St., Dorchester, Mass. ADV. PG. 64, 65
LIQUID METALS, INC., Box 266, Westford, Mass. ADV. PG. 233
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
Pittsburgh Piping & Equipment Co., 158 49th St., Pittsburgh, Pa.
Smith Corp., A. O., 3533 N. 27th St., Milwaukee 1, Wis.
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England ADV. PG. 66
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
WHEELER MFG. CO., C. H., 19th & Lehigh Sts., Philadelphia 32, Pa. ADV. PG. 244

LUBRICANTS

Acheson Colloids Co., Div. of Acheson Industries, Inc., 1631 Washington Ave., Port Huron, Mich.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
Custom Lubricant Co., 743 Dwight Way, Berkeley 10, Calif.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Dow Corning Corp., Midland, Mich.
Felt Products Mfg. Co., 7450 N. McCormick Blvd., Skokie, Ill.
Foote Mineral Co., 18 W. Chelten Ave., Philadelphia 44, Pa.
General Electric Co., Silicone Products Dept., Waterford, N. Y.
Hooker Chemical Corp., 13 Iroquois St., Niagara Falls, N. Y.
Huron Industries, P. O. Box 557, Port Huron, Mich.
Knapp Mills, Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
Minnesota Mining & Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.
Monsanto Chemical Co., Plastics Div., 600 Monsanto Ave., Springfield 2, Mass.
Raybestos-Manhattan, Inc., 75 E. Main St., Stratford, Conn.
SHELL OIL CO., LUBRICANTS DIV., 50 W. 50th St., New York, N. Y. ADV. PG. 93
Silicones Division, Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
Texas Research Foundation, Renner, Texas
U. S. Graphite Co., Div. of The Wickes Corp., Holland Ave., Saginaw 5, Mich.
Union Carbide Chemicals Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
Varnitan Co., 416 N. Varney St., Burbank, Calif.

LUBRICANTS—Radiation Resistant

Acheson Colloids Co., Div. of Acheson Industries, Inc., 1631 Washington Ave., Port Huron, Mich.
SHELL OIL CO., LUBRICANTS DIV., 50 W. 50th St., New York 20, N. Y. ADV. PG. 93

MACHINE TOOLS

Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Belock Instrument Corp., 111-01 14th Ave., College Point, N. Y.
Chandler & Stedman, 398 Newton St., Waltham 54, Mass.
Engis Equipment Co., 431 S. Dearborn St., Chicago, Ill.
Kearney & Trecker Corp., 6800 W. National Ave., Milwaukee 14, Wis.
King Machine Tool Div., American Steel Foundries, 1150 Tennessee Ave., Cincinnati 29, Ohio
LOMA MACHINE MFG. CO., INC., 114 E. 32nd St., New York, N. Y. ADV. PG. 235
Mico Instrument Co., 82 S. Trowbridge St., Cambridge 38, Mass.
Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 1, Wis.
NORTON CO., 1 New Bond St., Worcester 6, Mass. ADV. PG. 77
Precision Methods & Machine, Inc., Cumberland Drive, Waterbury, Conn.
SHEFFIELD CORP., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Sunstrand Turbo Div. of Sunstrand Machine Tool, Pacoima, Calif.
U.S.I. Technical Center, Div. of U.S. Industries, Inc., 3901 N. E. 12th Ave., Pompano Beach, Fla.

MACHINES—Swaging

FENN MANUFACTURING CO., THE, 200 Fenn Rd., Newington, Conn. ADV. PG. 11
LOMA MACHINE MFG. CO., INC., 114 E. 32nd St., New York, N. Y. ADV. PG. 235

MAGNETIC MATERIALS

Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.
ALLEGHENY LUDLUM STEEL CORP., Oliver Bldg., Room 2020, Pittsburgh 22, Pa. ADV. PG. 109
Ampex Corp., Instrumentation Div., 934 Charter St., Redwood City, Calif.
Antara Chemicals, Div. of General Aniline & Film Corp., 435 Hudson St., New York 14, N. Y.

Arnold Engineering Co., Marengo, Ill.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Crucible Steel Co. of America, Dept. N. B. G., Box 2518, Pittsburgh 30, Pa.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
General Ceramics Corp., 250 Crows Mill Rd., Keasbey, N. J.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co., Metallurgical Products Dept., 11139 E. Eight Mile Blvd., Detroit 32, Mich.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Magnetics, Inc., Box 391, Butler, Pa.
Mullard Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
National Moldite Co., 250 South St., Newark, N. J.
PERFECTION MICA CO., MAGNETIC SHIELD DIV., 1322 N. Elston Ave., Chicago 22, Ill. ADV. PG. 234
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

MAGNETS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
Arnold Engineering Co., Marengo, Ill.
Atomic Laboratories, Berkeley, Calif.
Barker Sales Co., 339 S. Broad Ave., Ridgefield, N. J.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Crucible Steel Co. of America, Dept. N. B. G., Box 2518, Pittsburgh 30, Pa.
Cutler-Hammer, Inc., 412 N. 12th St., Milwaukee 1, Wis.
Edison Industries, Thomas A., Instrument Div., West Orange, N. J.
Electro Engineering Works, 401 Preda St., San Leandro, Calif.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co., Metallurgical Products Dept., 11139 E. Eight Mile Blvd., Detroit 32, Mich.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Indiana Steel Products Co., The, Valparaiso, Ind.
Little, Inc., Arthur D., 30 Memorial Drive, Cambridge 42, Mass.
Mullard Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
National Moldite Co., 250 South St., Newark, N. J.
Pacific Electric Motor Co., 1009 66th Ave., Oakland 21, Calif.
Permag Corp., 214 Taaffe Place, Brooklyn 5, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V. Eindhoven, Holland ADV. PG. 86
Scientific Engineering Laboratory, 1510 6th St., Berkeley 10, Calif.
Stackpole Carbon Co., St. Marys, Pa.
Steward Mfg. Co., D. M., E. 36th St., Chattanooga 1, Tenn.
Thermo Materials Inc., 4040 Campbell Ave., Menlo Park, Ill.
Varian Associates, 611 Hansen Way, Palo Alto, Calif.
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.

MANIPULATORS—Remote

See also TONGS—Handling

AMF Atomics, a Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
ATOMIC ACCESSORIES, INC., 244—04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
CENTRAL RESEARCH LABORATORIES, INC., Red Wing, Minn. ADV. PG. 52, 53
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54 , Calif.
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Elm Laboratories, 10 Washington Ave., Hastings-on-Hudson, N. Y.
Farrel-Birmingham Co., Inc., Ansonia, Conn.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
GENERAL MILLS, INC., MECHANICAL DIV., NUCLEAR EQUIPMENT DEPT., 1620 Central Ave. N. E., Minneapolis, Minn. ADV. PG. 60, 61
General Radiological Ltd., 15—18 Clipstone St., London, W. 1, England
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
M-H Standard Corp., 513—521 Communipaw Ave., Jersey City, 4, N. J.
MARVEL-SCHEBLER PRODUCTS DIV. OF BORG-WARNER CORP., Decatur, Ill. ADV. PG. 161
Nuclear Science Associates, 55 Manor Drive, Newark 6, N. J.
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
U. S. I. Technical Center, Div. of U. S. Industries, Inc., 3901 N. E. 12th Ave., Pompano Beach, Fla.

MANOMETERS

See GAGES—Pressure

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PACKARD INSTRUMENT CO., INC., P. O. Box 428, La Grange, Ill. ADV. PG. 82
REED CO., INC., C. W., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 240
WALSH & ASSOCIATES, C. J., 686 Pine St., Deerfield, Ill. ADV. PG. 251

MASKS—Protective

Acme Protection Equipment Co., 1299 E. Kalamazoo St., South Haven, Mich.
American Optical Co., 28 Mechanic St., Southbridge, Mass.
General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50, Pa.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Martindale Electric Co., Box 617, Edgewater Branch, Cleveland 7, Ohio
Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.
New Jersey Safety Equipment Co., Park Ave. at Garden State Pkwy., East Orange, N. J.
Ulanet Co., George, 413 Market St., Newark 5, N. J.

MEGOHMMETERS

See also OHMMETERS

AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Island City 6, N. Y. ADV. PG. 186
Associated Research, Inc., 3777 W. Belmont, Chicago, Ill.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Bruel & Kjaer, Naerum, Denmark
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Freed Transformer Co., Inc., 1736 Weirfield St., Brooklyn 27, N. Y.
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
Greibach Instruments Corp., 315 North Ave., New Rochelle, N. Y.
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
Industrial Instruments, Inc., 89 Commerce Rd., Cedar Grove, N. J.
International Telephone & Telegraph Corp., Industrial Products Div., 250 Garibadi Ave., Lodi, N. J.
KEITHLEY INSTRUMENTS, INC., 12415 Euclid Ave., Cleveland 6, Ohio. ADV. PG. 104
MacLeod & Hanopol, Inc., 10 Roland St., Charlestown 29, Mass.
Martindale Electric Co., Box 617, Edgewater Branch, Cleveland 7, Ohio
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Meters, Inc., 5353 N. Keystone Ave., Indianapolis 20, Ind.
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. ADV. PG. 198, 199
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
PHYSICS RESEARCH LABORATORIES, P. O. Box 555, Hempstead, N. Y. ADV. PG. 166
Precision Apparatus Co., Inc., 70—31 84th St., Glendale 27, N. Y.
Q.V.S., Inc., 20 N. 15th St., East Orange, N. J.
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
Sticht Co., Inc., Herman H., 27 Park Place, New York 7, N. Y.
Winslow Co., Inc., 705 Lehigh Ave., P. O. Box 394, Union, N. J.

METAL FABRICATORS—Ferrous

Accurate Sheet Metal & Mfg. Works, 2336—44 Milwaukee Ave., Chicago 47, Ill.
Adler's Metal Works, 1310 Germantown Ave., Philadelphia 22, Pa.
Akron Metallic Gasket Co., The, 150 N. Union St., Akron, Ohio
ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
Amco Engineering Co., 7333 Ainslie St., Chicago 31, Ill.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
American Welding & Mfg. Co. Dietz Rd., Warren, Ohio
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
Avondale Marine Ways, Inc., P. O. Box 1030, New Orleans, La.
Babcock & Wilcox Ltd., Babcock House, 209 Eustron Rd., London N. W. 1, England
Ballou & Co., Inc., B. A., 61 Peck St., Providence, R. I.
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bishop & Co., J., Platinum Works, Malvern, Pa.
BLICKMAN, INC., S., 7900 Gregory Ave., Weehawken, N. J. ADV. PG. 190
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Bud Radio, Inc., 2118 E. 55th St., Cleveland 3, Ohio
Chandler & Stedman, 398 Newton St., Waltham 54, Mass.
Chicago Bridge & Iron Co., 1305 W. 105th St., Chicago 43, Ill.
Chicago Steel Tank Co., 6400 W. 66th St., Chicago, Ill.
Christiansen Co., C. B., 164 Pennington St., Newark, N. J.
Combustion Engineering, Inc., 200 Madison Ave., New York 6, N. Y.
Condenser Service & Engineering Co., Inc., 50 Observer Highway, Hoboken, N. J.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Cooper Co., D. C., 1467 S. Michigan Ave., Chicago, Ill.
CURTISS-WRIGHT CO., METAL PROCESSING DIV., 760 Northland Ave., Buffalo, N. Y. ADV. PG. 107
Doyle & Roth Mfg. Co., Inc., 136—50 24th St., Brooklyn 32, N. Y.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Falstrom Company, 7 Falstrom Court, Passaic, N. J.
Farrel-Birmingham Co., Inc., Ansonia, Conn.
Fasco Industries Inc., Rochester 2, N. Y.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
Garde Mfg. Co., 588 Eddy St., Providence 3, R. I.
General Alloys Co., 400 W. First St., Boston 27, Mass.
General American Transportation Corp., 135 S. La Salle, Chicago, Ill.
General Lead Construction Corp., 1800 Harrison Ave., Kearny, N. J.
General Metals, Inc., 358 Goldboro St., P. O. Box 448, Greensboro, N. C.
GRAVER TANK & MFG. CO., INC., 4809 Tod Ave., East Chicago, Ind. ADV. PG. 195
GRISCOM-RUSSELL CO., SUB. OF GENERAL PRECISION EQUIPMENT CORP., Massillon, Ohio ADV. PG. 98
Harty Co., Inc., R. V., 1433 Sloman Ave., Detroit 11, Mich.
HOKE, INC., Cresskill N. J. ADV. PG. 222
Hunter-Bristol Div., Thiokol Chemical Corp., Bristol, Pa.
KELLEY & CO., O. G., 98 Taylor St., Dorchester, Mass. ADV. PG. 64, 65
Kinetics Corp., 2 Churchill Rd., Hingham, Mass.
Knapp Mills, Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
Kowen Fabricators, Inc., 90 E. Dickerson St., Dover, N. J.
LADISH CO., 5458 S. Packard Ave., Cudahy, Wis. ADV. PG. 46, 47
L & B Welding Equipment, Inc., 2424 6th St., Berkeley, Calif.
L & S Machine Co., Inc., P. O. Box 317, R. D. 2, Latrobe, Pa.
LaVezzi Machine Works, 4635 W. Lake St., Chicago 44, Ill.
Leader Iron Works, Inc., 2150 N. Jasper, Decatur, Ill.
Leavitt Machine Co., 10 E. River St., Orange, Mass.
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Lindberg Engineering Co., 2450 W. Hubbard St., Chicago 12, Ill.

Lukens Steel Co., 266 Lukens Bldg., Coatesville, Pa.
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3 Md.
Measurement Engineering Ltd., Arnprior, Ontario, Canada
Menasco Mfg. Co., 805 S. San Fernando Blvd., Burbank, Calif.
Metals & Controls Corp., General Plate Div., 40 Forest St., Attleboro, Mass.
Metals Research & Development, Inc., Tunkhannock Ave., Exeter, Pa.
National Moldite Co., 250 South St., Newark, N. J.
Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 1, Wis.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Penn Fibre & Specialty Co., 2020 E. Westmoreland St., Philadelphia 34, Pa.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
Pittsburgh—Des Moines Steel Co., Pittsburgh 25, Pa.
Precision, Inc., 730 Lyndale Ave., N., Minneapolis, Minn.
Precision Methods & Machine, Inc., Cumberland Drive, Waterbury, Conn.
Premier Metal Products Co., 337 Manida St., Bronx 59, N. Y.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
SANDUSKY FOUNDRY & MACHINE CO. W. Market St., Sandusky, Ohio ADV. PG. 147
Scovill Mfg. Co., Mills Div., 99 Mill St., Waterbury 20, Conn.
Sintercast Corp. of America, 134 Woodworth Ave., Yonkers, N. Y.
Smith Co., S. Morgan, York, Pa.
Smith Corp., A. O., 3533 N. 27th St., Milwaukee 1, Wis.
Specialty Engineering & Electronics Co., 79 Clifton Place, Brooklyn 38, N. Y.
Spincraft, Inc., 4158H W. State St., Milwaukee 8, Wis.
Standard Pressed Steel Co. Box 1033, Jenkintown, Pa.
Standard Railway Equipment Mfg. Co., 200 S. Michigan Ave., Chicago 4, Ill.
Steel & Alloy Tank Co., 1 Bessemer St., Newark 5, N. J.
Streed Products Corp., P. O. Box 447, Gadsden, Ala.
Struthers-Wells Corp., Warren, Pa.
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England ADV. PG. 66
Taylor Forge & Pipe Works, Inc., 4735 W. 14th St., Chicago 90, Ill.
Techniques, Inc., P. O. Box 85, Hackensack, N. J.
Telectro Industries Corp., 35—16 37th St., Long Island City 1 N. Y.
Teleweld Inc., 11535 Franklin St., Franklin Park, Ill.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept. 23555 Euclid Ave., Cleveland 17, Ohio
Tickle Engineering Works, Inc., Arthur, 30 Delevan St., Brooklyn 31, N. Y.
Transonic, Inc., 808 16th St., Box 59, Bakersfield, Calif.
Trio Machine Works, Inc., 3045 N. 3rd St., Philadelphia 33, Pa.
U. M. & F. Mfg. Corp., 10929 Vanowen St., North Hollywood, Calif.
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
United States Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa.
Universal Industrial Equipment Co., 1625 Paterson Plank Rd., Secaucus, N. J.
Watson Mfg. Co., Inc., 4800 Taylor St., Jamestown, N. Y.
WHEELER MFG. CO., C. H., 19th & Lehigh Sts., Philadelphia 32, Pa. ADV. PG. 244
Willamette Iron & Steel Co., 2800 N. W. Front Ave., Portland 10, Ore.
WISCONSIN STAINLESS FOUNDRY & MACHINE CO., 823 E. St. Paul Ave., Waukesha, Wis. ADV. PG. 255
Wolverine Tube Div. of Calumet & Hecla, Inc., 17200 Southfield Rd., Allen Park, Mich.
York Corp., York, Pa.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

METAL FABRICATORS—Nonferrous

Accurate Sheet Metal & Mfg. Works, 2336-44 Milwaukee Ave., Chicago 47, Ill.
Adler's Metal Works, 1310 Germantown Ave., Philadelphia 22, Pa.
Akron Metallic Gasket Co., The, 150 N. Union St., Akron, Ohio
ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
Alloys Unlimited, Inc., 44-13 Vernon Blvd., Long Island City 1, N. Y.
Alpha Metals, Inc., 56 Water St., Jersey City 4, N. J.
Aluminum Co. of America, Alcoa Bldg., Pittsburgh 19, Pa.
Amco Engineering Co., 7333 Ainslie St., Chicago 31, Ill.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
American Brass Co., Waterbury 20, Conn.
American Welding & Mfg. Co., Dietz Rd., Warren, Ohio
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
Avondale Marine Ways, Inc., P. O. Box 1030, New Orleans, La.
Ballou & Co., Inc., B. A., 61 Peck St., Providence, R. I.
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
Bean & Co., Morris, Yellow Springs 15, Ohio
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn 7, N. Y.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
BLICKMAN, INC., S. 7900 Gregory Ave., Weehawken, N. J. ADV. PG. 190
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, 820 65th Ave., Philadelphia 26, Pa.
Brooks & Perkins, Inc., 261 Constitution Ave., N. W., Washington 1, D. C.
CAMBRIDGE SMELTING CO., 100 Pacific St., Cambridge Mass. ADV. PG. 238
CARBORUNDUM METALS CO., DIV. OF THE CARBORUNDUM CO., P. O. Box 32, Akron, N. Y. ADV. PG. 54, 55
Chandler & Stedman, 398 Newton St., Waltham 54, Mass.
Chicago Bridge & Iron Co., 1305 W. 105th St., Chicago 43, Ill.
Chicago Steel Tank Co., 6400 W. 66th St., Chicago, Ill.
Christiansen Co., C. B., 164 Pennington St., Newark, N. J.
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Condenser Service & Engineering Co., Inc., 150 Observer Highway, Hoboken, N. J.
Consolidated Reactive Metals Inc., 43 W. 46th St., New York 46, N. Y.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Cooper Co., D. C., 1467 S. Michigan Ave., Chicago, Ill.
Dow Chemical Co., Midland, Mich.
Doyle & Roth Mfg. Co., Inc., 136-50 24th St., Brooklyn 32, N. Y.
Driver-Harris Co., 201 Middlesex St., Harrison, N. J.
Edlow Lead Co., 729 Bank St., Columbus 16, Ohio
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Falstrom Company, 7 Falstrom Court, Passaic, N. J.
Fasco Industries, Inc., Rochester 2, N. Y.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
Garde Mfg. Co., 588 Eddy St., Providence 3, R. I.
General Alloys Co., 400 W. First St., Boston 27, Mass.
GRAVER TANK & MFG. CO., INC., 4809 Tod Ave., East Chicago, Ind. ADV. PG. 195
GRISCOM-RUSSELL CO., SUB. OF GENERAL PRECISION EQUIPMENT CORP., Massillon, Ohio ADV. PG. 98
HARVEY ALUMINUM, 19200 S. Western Ave., Torrance, Calif. ADV. PG. 59
Hunter-Bristol Div., Thiokol Chemical Corp., Bristol, Pa.
Indium Corp. of America, 1676 Lincoln Ave., Utica 4, N. Y.
KELLEY & CO., O. G., 98 Taylor St., Dorchester, Mass. ADV. PG. 64, 65
Kinetics Corp., 2 Churchill Rd., Hingham, Mass.
Knapp Mills, Inc., 23-15 Borden Ave., Long Island City 1, N. Y.
Koven Fabricators, Inc., 90 E. Dickerson St., Dover, N. J.
L & B Welding Equipment, Inc., 2424 6th St., Berkeley, Calif.
L & S Machine Co., Inc., P. O. Box 317, R. D. #2, Latrobe, Pa.
LADISH CO., 5458 S. Packard Ave., Cudahy, Wis. ADV. PG. 46, 47
LEAD PRODUCTS, INC., Hartford Rd., Manchester, Conn. ADV. PG. 238
Leader Iron Works, Inc., 2150 N. Jasper, Decatur, Ill.
Leavitt Machine Co., 10 E. River St., Orange, Mass.
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Lindberg Engineering Co., 2450 W. Hubbard St., Chicago 12, Ill.
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
M-H Standard Corp., 513-521 Communipaw Ave., Jersey City 4, N. J.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Menasco Mfg. Co., 805 S. San Fernando Blvd., Burbank, Calif.
Metals & Controls Corp., General Plate Div., 40 Forest St., Attleboro, Mass.
Metals Research & Development, Inc., Tunkhannock Ave., Exeter, Pa.
National Lead Co., 111 Broadway, New York 6, N. Y.
Ney Co., J. M., Drawer 990, Hartford, Conn.
Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 1, Wis.
NUCLEAD, INC., 110 Pacific St., Cambridge, Mass. ADV. PG. 238
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
NUCLEAR MATERIALS & EQUIPMENT CORP., 680 Warren Ave., Apollo, Pa. ADV. PG. 163
Oregon Metallurgical Corp., Albany, Ore.
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Penn Fibre & Specialty Co., 2020 E. Westmoreland St., Philadelphia 34, Pa.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
Phelps Dodge Copper Products Corp., 300 Park Ave., New York 22, N. Y.
Pittsburgh Des Moines Steel Co., Pittsburgh 25, Pa.
Precision Methods & Machine, Inc., Cumberland Drive, Waterbury, Conn.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
SANDUSKY FOUNDRY & MACHINE CO., W. Market St., Sandusky, Ohio ADV. PG. 147
Sintercast Corp. of America, 134 Woodworth Ave., Yonkers, N. Y.
Smith Corp., A. O., 3533 N. 27th St., Milwaukee 1, Wis.
Specialty Engineering & Electronics Co., 79 Clifton Place, Brooklyn 38, N. Y.
Spincraft, Inc., 4158H W. State St., Milwaukee 8, Wis.
Standard Pressed Steel Co., Box 1033, Jenkintown, Pa.
Standard Railway Equipment Mfg. Co., 200 S. Michigan Ave., Chicago 4, Ill.
Steel & Alloy Tank Co., 1 Bessemer St., Newark 5, N. J.
Streed Products Corp., P. O. Box 447, Gadsden, Ala.
Struthers-Wells Corp., Warren, Pa.
SYLVANIA-CORNING NUCLEAR CORP., 208—20 Willetts Point Blvd. Bayside N. Y. ADV. PG. 141
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England ADV. PG. 66
Techniques, Inc., P. O. Box 85, Hackensack, N. J.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Tickle Engineering Works, Inc., Arthur, 30 Delevan St., Brooklyn 31, N. Y.
Transonic, Inc., 808 16th St., Box 59, Bakersfield, Calif.
Trio Machine Works, Inc., 3045 N. 3rd St., Philadelphia 33, Pa.
U. M. & F. Mfg. Corp., 10929 Vanowen St., North Hollywood, Calif.
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
Universal Industrial Equipment Co., 1625 Paterson Plank Rd., Secaucus, N. J.
Watson Mfg. Co., Inc., 4800 Taylor St., Jamestown, N. Y.
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.
WHEELER MFG. CO., C. H., 19th & Lehigh Sts., Philadelphia 32, Pa. ADV. PG. 244
Willamette Iron & Steel Co., 2800 N. W. Front Ave., Portland 10, Ore.
Wolverine Tube Div. of Calumet & Hecla, Inc., 17200 Southfield Rd., Allen Park, Mich.
York Corp., York, Pa.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

METALLURGICAL

See SERVICES

METALS, ALLOYS AND COMPOUNDS

(Including Rare Earths)

Aluminum

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Aluminum Co. of America, Alcoa Bldg., Pittsburgh 19, Pa.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Baker Chemical Co., J. T., Phillipsburg, N. J.
Bean & Co., Morris, Yellow Springs 15, Ohio
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.

Brooks & Perkins, Inc., 261 Constitution Ave., N. W. Washington, D. C.
Chase Brass & Copper Co., Inc., 236 Grand St., Waterbury 20, Conn.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Cohn Corp., Sigmund, 121 S. Columbus Ave., Mt. Vernon, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave., Portland 10, Ore. ADV. PG. 175
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway New York 5, N. Y. ADV. PG. 111
General Alloys Co., 400 W. First St., Boston 27, Mass.
HARVEY ALUMINUM, 19200 S. Western Ave., Torrance, Calif. ADV. PG. 59
Kaiser Aluminum & Chemical Sales, Inc., 919 N. Michigan Ave., Chicago 11, Ill.
Kawecki Chemical Co., Inc., 220 E. 42nd St., New York, N. Y.
Mackay, Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo.
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
National Lead Co., 111 Broadway, New York 6, N. Y.
Ohio Semiconductors, Inc., Columbus, Ohio
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Revere Copper & Brass, Inc., 230 Park Ave., New York 17, N. Y.
Ryerson & Son., Inc., Joseph T., P. O. Box 8000-A, Chicago, Ill.
Scovill Mfg. Co., Mills Div., 99 Mill St., Waterbury 20, Conn.
Vanadium Corp. of America, Graybar Bldg., 420 Lexington Ave., New York 17, N. Y.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
VIENER & SONS, HYMAN, 5300 Hatcher St., Dept. NU, Richmond 5, Va. ADV. PG. 221
Wolverine Tube Div. of Calumet & Hecla, Inc., 17200 Southfield Rd., Allen Park, Mich.

Antimony

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Alpha Metals, Inc., 56 Water St., Jersey City 4, N. J.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Barium & Chemicals, Inc., Willoughby, Ohio
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
CAMBRIDGE SMELTING CO., 100 Pacific St., Cambridge, Mass. ADV. PG. 238
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Cominco Metal Sales Div., 215 St. James St., W., Montreal 1, Canada
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
Fleischman, Burd & Co., Inc., 22 W. 48th St., New York 36, N. Y.
LEAD PRODUCTS, INC., Hartford Rd. Manchester, Conn. ADV. PG. 238
Mackay, Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo.
National Lead Co., 111 Broadway, New York 6, N. Y.
NUCLEAD, INC., 110 Pacific St. Cambridge, Mass. ADV. PG. 238
Ohio Semiconductors Inc., Columbus, Ohio
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Ver-Lac-Old Chemical Co. 116 Broad St., New York 4, N. Y.

Barium

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Barium & Chemicals, Inc., Willoughby, Ohio
Bram Metallurgical-Chemical Co., 820 5th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Cooper Metallurgical Associates, P. O. Box 3991, Cleveland 20, Ohio
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
General Electric Co., Ltd., of England, Magnet House, Kingsway, London, W. C. 2
King Laboratories, Inc., 127 Solar St., Syracuse 3, N. Y.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.

Beryllium

Alloys Unlimited Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Silver Co., 36-07 Prince St., Flushing 54, N. Y.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Beryllium Corp., P. O. Box 1462, Reading, Pa.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
Brooks & Perkins, Inc., 261 Constitution Ave., N. W., Washington, D. C.
Brush Beryllium Co., 4301 Perkins Ave., Cleveland 3, Ohio
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallory & Co. Inc., P. R., 58 S. Gray St., Indianapolis 6, Ind.
MALLORY-SHARON METALS CORP., Niles, Ohio ADV. PG. 5
Metals & Controls Corp., General Plate Div., 40 Forest St., Attleboro, Mass.
Nuclear Metals, Inc., Concord, Mass.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.

Bismuth

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Alpha Metals, Inc., 56 Walter St., Jersey City 4, N. J.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36, N. Y.
Ames Metal Products Co. 4323 S. Western Ave., Chicago, Ill.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Baker Chemical Co., J. T., Phillipsburg, N. J.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Cerro de Pasco Sales Corp., 300 Park Ave., New York 22, N. Y.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Cominco Metal Sales Div., 215 St. James St., W., Montreal 1, Canada
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
General Lead Construction Corp., 1800 Harrison Ave., Kearny, N. J.
Mackay, Inc., A. D., 198 Broadway New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Malinckrodt Sts., St. Louis 7, Mo.
National Lead Co., 111 Broadway, New York 6, N. Y.
Ohio Semiconductors, Inc., Columbus, Ohio
Rascher & Betzold Inc., 730 N. Franklin St., Chicago 10, Ill.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.

Brass and Bronze

American Brass Co., Waterbury 20, Conn.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36 N. Y.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
Chase Brass & Copper Co., Inc., 236 Grand St., Waterbury 20, Conn.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallory & Co., Inc., P. R. 58 S. Gary St., Indianapolis 6, Ind.
National Lead Co., 111 Broadway, New York 6, N. Y.
Phelps Dodge Copper Products Corp., 300 Park Ave., New York 22, N. Y.
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Revere Copper & Brass, Inc., 230 Park Ave., New York 17, N. Y.
SANDUSKY FOUNDRY & MACHINE CO., W. Market St., Sandusky, Ohio ADV. PG. 147
Scovill Mfg. Co., Mills Div., 99 Mill St., Waterbury 20, Conn.
VIENER & SONS HYMAN, 5300 Hatcher St., Dept. NU, Richmond 5, Va. ADV. PG. 221
Wolverine Tube Div. of Calumet & Hecla, Inc., 17200 Southfield Rd., Allen Park, Mich.

Cadmium

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1 N. Y.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36, N. Y.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Cerro de Pasco Sales Corp., 300 Park Ave., New York 22, N. Y.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Cominco Metal Sales Div., 215 St. James St., W., Montreal 1, Canada
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
Eagle-Picher Co., Cincinnati, Ohio
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
Fine Chemical Co., 250 W. 57th St., New York 19, N. Y.
Mackay, Inc., A. D., 198 Broadway New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo.
National Lead Co., 111 Broadway, New York 6, N. Y.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.

Calcium

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Baker Chemical Co., J. T., Phillipsburg N. J.
Barium & Chemicals, Inc., Willoughby, Ohio
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Beryllium Corp., P. O. Box 1462, Reading, Pa.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Electro Metallurgical Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
Fleischman, Burd Co., Inc., 22 W. 48th St., New York 36 N. Y.
Mackay Inc., A. D., 198 Broadway, New York 38 N. Y.
Metal Hydrides, Inc., 12—24 Congress St., Beverly, Mass.
Metals & Controls Corp., General Plate Div., 40 Forest St., Attleboro, Mass.
Nelco Metals, Inc., Canaan, Conn.

Cerium

Alloys Unlimited, Inc., 44-13 Vernon Blvd., Long Island City 1, N. Y.
American Electro Metal Div. of Firth Sterling, Inc., 320 Yonkers Ave., Yonkers, N. Y.
American Potash & Chemical Corp., 3030 W. 6th St., Los Angeles 54, Calif.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Borolite Corp., 320 Yonkers Ave., Yonkers, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Davison Chemical Div. of W. R. Grace Co., Rare Earths Dept., Box 488, Pompton Plains, N. J.
Delta Chemical Works, 21, W. 60th St, New York 23, N. Y.
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
Heavy Minerals Co., 4000 N. Hawthorne St., Chattanooga, Tenn.
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
LINDSAY CHEMICAL CO., 272 Ann St., West Chicago, Ill. ADV. PG. 6
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo.
Metallo Chemical Corp., 117 Liberty St., New York 6, N. Y.
New Process Metals, Inc., 45-65 Manufacturers Place, Newark 5, N. J.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Research Chemicals, Inc., Box 431, Burbank, Calif.
St. Eliel Corp., Box 507, Newton Station, Cincinnati 44, Ohio

Ver-Lac-Oid Chemical Co., 116 Broad St., New York 4, N. Y.
Vitro Corp. of America, 261 Madison Ave., New York, N. Y.

Chromium

Alloys Unlimited, Inc., 44-13 Vernon Blvd., Long Island City 1, N. Y.
Austenal, Inc., 224 E. 39th St., New York 16, N. Y.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Cooper Metallurgical Associates, P. O. Box 3991, Cleveland 20, Ohio
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Driver Co., Wilbur B., 1875 McCarter Highway, Newark 4, N. J.
Electro Metallurgical Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Fleischman, Burd & Co., Inc., 22 W. 48th St., New York 36, N. Y.
General Alloys Co., 400 W. First St., Boston 27, Mass.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Metals & Thermit Corp., Rahway, N. J.
Nuclear Metals, Inc. Concord, Mass.
SHIELDALLOY CORP., Newfield, N. J. ADV. PG. 256
Vanadium Corp. of America, Graybar Bldg., 420 Lexington Ave., New York 17, N. Y.
Ver-Lac-Oid Chemical Co., 116 Broad St., New York 4, N. Y.

Cobalt

Alloys Unlimited, Inc., 44-13 Vernon Blvd., Long Island City 1, N. Y.
Austenal, Inc., 224 E. 39th St., New York 16, N. Y.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Driver Co., Wilbur B., 1875 McCarter Highway, Newark 4, N. J.
Fine Chemical Co., 250 W. 57th St., New York 19, N. Y.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 3, Pa.
Foote Mineral Co., 18 W. Chelten Ave., Philadelphia 44, Pa.
Mackay, Inc., A. D., 98 Broadway, New York 38, N. Y.
National Lead Co., 111 Broadway, New York 6, N. Y.
Nuclear Metals, Inc., Concord, Mass.
Ver-Lac-Oid Chemical Co., 116 Broad St., New York 4, N. Y.

Copper

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Brass Co., Waterbury 20, Conn.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36, N. Y.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Baker Chemical Co., J. T., Phillipsburg, N. J.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
Cerro de Pasco Sales Corp., 300 Park Ave., New York 22, N. Y.
Chase Brass & Copper Co., Inc., 236 Grand St., Waterbury 20, Conn.
Chromium Corp. of America, Box 1229, Waterbury 20, Conn.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Driver Co., Wilbur B., 1875 McCarter Highway, Newark 4, N. J.
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
General Alloys Co., 400 W. First St., Boston 27, Mass.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo.
Phelps Dodge Copper Products Corp., 300 Park Ave., New York 22, N. Y.
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Revere Copper & Brass, Inc., 230 Park Ave., New York 17, N. Y.
Scovill Mfg. Co., Mills Div., 99 Mill St., Waterbury 20, Conn.
Wolverine Tube Div. of Calumet & Hecla, Inc., 17200 Southfield Rd., Allen Park, Mich.

Dysprosium

Doran Co., A. V., 950 Francis Place, St. Louis, Mo.
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
LINDSAY CHEMICAL CO., 272 Ann St., West Chicago, Ill. ADV. PG 6
MICHIGAN CHEMICAL CORP, RARE EARTH & THORIUM DIV., St. Louis, Mich. ADV. PG. 174
Research Chemicals, Inc., Box 431, Burbank, Calif.
St. Eloi Corp., Box 507, Newtown Station, Cincinnati 44, Ohio

Erbium

Doran Co., A. V., 950 Francis Place, St. Louis, Mo.
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
LINDSAY CHEMICAL CO., 272 Ann St., West Chicago, Ill. ADV. PG. 6
MICHIGAN CHEMICAL CORP., RARE EARTH & THORIUM DIV., St. Louis, Mich. ADV. PG. 174
Research Chemicals, Inc., Box 431, Burbank, Calif.
St. Eloi Corp., Box 507, Newtown Station, Cincinnati 44, Ohio

Europium

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Electro Metal Div. of Firth Sterling, Inc., 320 Yonkers Ave., Yonkers, N. Y.
American Potash & Chemical Corp., 3030 W. 6th St., Los Angeles 54, Calif.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Borolite Corp., 320 Yonkers Ave., Yonkers, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave, Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Davison Chemical Div. of W. R. Grace Co., Rare Earths Dept., Box 488, Pompton Plains, N. J.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Fine Chemical Co., 250 W. 57th St., New York 19, N. Y.
Firth Sterling, Inc., 1313 Forbes St., Pittsburgh 30, Pa.
Gows Chemical Co., Inc., The, P. O. Box 443, Laramie, Wy.
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
LINDSAY CHEMICAL CO., 272 Ann St., West Chicago, Ill. ADV. PG. 6
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Metallo Chemical Corp., 117 Liberty St., New York 6, N. Y.
MICHIGAN CHEMICAL CORP., RARE EARTH & THORIUM DIV, St. Louis, Mich. ADV. PG. 174
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Research Chemicals, Inc., Box 431, Burbank, Calif.
St. Eloi Corp., Box 507, Newton Station, Cincinnati 44, Ohio
Ver-Lac-Oid Chemical Co., 116 Broad St., New York 4, N. Y.
Vitro Corp. of America, 261 Madison Ave., New York, N. Y.

Gadolinium

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Electro Metal Div. of Firth Sterling, Inc., 320 Yonkers Ave., Yonkers, N. Y.
American Potash & Chemical Corp., 3030 W. 6th St., Los Angeles 54 Calif.
Anchor Metal Co. Inc. 966 Meeker Ave. Brooklyn 22, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Borolite Corp., 320 Yonkers Ave., Yonkers, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelpha 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York N. Y.
Davison Chemical Div. of W. R. Grace Co., Rare Earths Dept., Box 488 Pompton Plans, N. J.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
Fine Chemical Co., 250 W. 57th St., New York 19, N. Y.
Firth Sterling, Inc., 113 Forbes St., Pittsburgh 30, Pa.
Gows Chemical Co., Inc., The, P. O. Box 443, Laramie, Wy.
Jarrell-Ash Co. 26 Farwell St., Newtonville 60, Mass.
LINDSAY CHEMICAL CO., 272 Ann St., West Chicago, Ill. ADV. PG. 6
Mackay, Inc., A. D., 198 Broadway New York 38, N. Y.
Metallo Chemical Corp., 117 Liberty St., New York 6, N. Y.
MICHIGAN CHEMICAL CORP., RARE EARTH & THORIUM DIV., St. Louis, Mich. ADV. PG. 174
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Research Chemicals, Inc., Box 431, Burbank, Calif.
St. Eloi Corp., Box 507, Newton Station, Cincinnati 44, Ohio
Ver-Lac-Oid Chemical Co., 116 Broad St., New York 4, N. Y.
Vitro Corp. of America, 261 Madison Ave., New York, N. Y.

Gallium

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Aluminum Co. of America, Alcoa Bldg., Pittsburgh 19, Pa.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Eagle-Picher Co., Cincinnati, Ohio
Fine Chemical Co., 250 W. 57th St., New York 19, N. Y.
Mackay Inc., A. D. 198 Broadway, New York 38, N. Y.
Ohio Semiconductors, Inc., Columbus, Ohio
Ver-Lac-Oid Chemical Co., 116 Broad St., New York 4, N. Y.

Germanium

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Metal Climax, Inc., The, 500 Fifth Ave. New York 36, N. Y.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Baker & Adamson Products, General Chemical Div. of Allied Chemical Corp., 40 Rector St., New York 6, N. Y.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Eagle-Picher Co., Cincinnati, Ohio
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
Fine Chemical Co., 250 W. 57th St., New York 19, N. Y.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Mackay, Inc., A. D., 198 Broadway, New York 38 N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN N. V., Eindhoven, Holland ADV. PG. 86
Sylvania Electric Products Inc., Chemical & Metallurgical Div., Towanda, Pa.
Ver-Lac-Oid Chemical Co., 116 Broad St., New York 4, N. Y.

Gold

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36, N. Y.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Ballou & Co., Inc., B. A. 61 Peck St., Providence, R. I.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bishop & Co., J., Platinum Works, Malvern, Pa.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York N. Y.
Cohn Corp., Sigmund, 121 S. Columbus Ave., Mt. Vernon, N. Y.
Consolidated Reactive Metals Inc., 43 W. 46th St., New York, 46, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Engelhard Industries Inc., 113 Astor St., Newark 2, N. J.
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
Fine Chemical Co., 250 W. 57th St., New York 19, N. Y.
Handy & Harman, 82 Fulton St., New York 38, N. Y.

Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau Germany
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Metals & Controls Corp., General Plate Div., 40 Forest St., Attleboro, Mass.
Metz Refining Co., 369 Mulbery St., Newark 2, N. J.
Ney Co., J. M., Drawer 990 Hartford, Conn.
Phelps Dodge Copper Products Corp., 300 Park Ave., New York 22 N. Y.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.
Yuba Consolidated Industries Inc., 351 California St., San Francisco 4, Calif.

Hafnium

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
CARBORUNDUM METALS CO., DIV. OF THE CARBORUNDUM CO., P. O. Box 32, Akron, N. Y. **ADV. PG. 54, 55**
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
COLUMBIA-NATIONAL CORP., 70 Memorial Drive, Cambridge 42, Mass. **ADV. PG. 105**
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
Fine Chemical Co., 250 W. 57th St., New York 19, N. Y.
HARVEY ALUMINUM, 19200 S. Western Ave., Torrance, Calif. **ADV. PG. 59**
Johnston & Funk Metallurgical Corp., W. Kemrow Ave., Wooster, Ohio
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
MALLORY-SHARON METALS CORP., Niles, Ohio **ADV. PG. 5**
Metals & Controls Corp., General Plate Div., 40 Forest St., Attleboro, Mass.
NUCLEAR MATERIALS & EQUIPMENT CORP., 680 Warren Ave., Apollo, Pa. **ADV. PG. 163**
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.

Indium

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N.Y.
Bios Laboratories Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Cerro de Pasco Sales Corp., 300 Park Ave., New York 22, N. Y.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Cominco Metal Sales Div., 215 St. James St., W., Montreal 1, Canada
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. **ADV. PG. 111**
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Indium Corp. of America, 1676 Lincoln Ave., Utica 4, N. Y.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Metals & Controls Corp., General Plate Div., 40 Forest St., Attleboro, Mass.
Ohio Semiconductors, Inc., Columbus, Ohio
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.

Iridium

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bishop & Co., J., Platinum Works, Malvern, Pa.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 6, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Consolidated Reactive Metals Inc., 43 W. 46th St., New York 46, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
Fleischman, Burd & Co., Inc., 22 W. 48th St., New York 36, N. Y.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Metals & Controls Corp., General Plate Div., 40 Forest St., Attleboro, Mass.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.

Iron

American Cast Iron Pipe Co., Special Products Div. 2930 N. 16th St., Birmingham, Ala.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Antara Chemicals Div. of General Aniline & Film Corp., 435 Hudson St., New York 14, N. Y.
Armco Steel Corp., Middletown, Ohio
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Cohn Corp., Sigmund, 121 S. Columbus Ave., Mt. Vernon, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Farrel-Birmingham Co., Inc., Ansonia, Conn.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo.
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
National Lead Co., 111 Broadway, New York 6, N. Y.
Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio
U. S. PIPE & FOUNDRY CO., STEEL & TUBES DIV., Burlington, N. J. **ADV. PG. 14, 15**
United States Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.

Lanthanum

Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Electro Metal Div. of Firth Sterling, Inc., 320 Yonkers Ave., Yonkers, N. Y.
American Potash & Chemical Corp., 3030 W. 6th St., Los Angeles 54, Calif.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Borolite Corp., 320 Yonkers Ave., Yonkers, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Davison Chemical Div. of W. R. Grace Co., Rare Earths Dept., Box 488, Pompton Plains, N. J.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Fine Chemical Co., 250 W. 57th St., New York 19, N. Y.
Gows Chemical Co., Inc., The, P. O. Box 443, Laramie, Wy.
Heavy Minerals Co., 4000 N. Hawthorne St., Chattanooga, Tenn.
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
LINDSAY CHEMICAL CO., 272 Ann St., West Chicago, Ill. **ADV. PG. 6**
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Maywood Chemical Works, 111 W. Hunter Ave., Maywood, N. J.
Metallo Chemical Corp., 117 Liberty St., New York 6, N. Y.
New Process Metals, Inc., 45—65 Manufacturers Place, Newark 5, N. J.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Research Chemicals, Inc., Box 431, Burbank, Calif.
St. Eloi Corp., Box 507, Newtown Station, Cincinnati 44, Ohio
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Vitro Corp. of America, 261 Madison Ave., New York, N. Y.

Lead

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Alpha Metals, Inc., 56 Water St., Jersey City 4, N. J.
AMERAY CORP., 25 Route #46, Kenvil, N. J. **ADV. PG. 30**
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36, N. Y.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Andel & Co., Inc., 5218 N. Kedzie Ave., Chicago 25, Ill.
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. **ADV. PG. 103**
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
CAMBRIDGE SMELTING CO., 100 Pacific St., Cambridge, Mass. **ADV. PG. 238**
Cerro de Pasco Sales Corp., 300 Park Ave., New York 22, N. Y.
City Chemical Corp., 132 W. 22nd St., New York, N.Y.
Cominco Metal Sales Div., 215 St. James St., W., Montreal 1, Canada
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
Edlow Lead Co., 729 Bank St., Columbus 16, Ohio
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. **ADV. PG. 111**
General Lead Construction Corp., 1800 Harrison Ave., Kearny, N. J.
Glaser Lead Co., Inc., 31 Wyckoff Ave., Brooklyn 27, N. Y.
KELLEY & CO., O. G., 98 Taylor St., Dorchester, Mass. **ADV. PG. 64, 65**
Knapp Mills, Inc., 23—15 Borden Ave, Long Island City, N. Y.
LEAD PRODUCTS, INC., Hartford Rd., Manchester, Conn. **ADV. PG. 238**
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
National Lead Co., 111 Broadway, New York 6, N. Y.
NUCLEAD, INC., 110 Pacific St., Cambridge, Mass. **ADV. PG. 238**
Ohio Semiconductors, Inc., Columbus, Ohio
RAY-PROOF CORP., 843 Canal St., Stamford, Conn. **ADV. PG. 272**
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. **ADV. PG. 92**
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
VIENER & SONS, HYMAN, 5300 Hatcher St., Dept. NU, Richmond 5, Va. **ADV. PG. 221**

Lithium

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Potash & Chemical Corp., 3030 W. 6th St., Los Angeles 54, Calif.
Barium & Chemicals, Inc., Willoughby, Ohio
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Foote Mineral Co., 18 W. Chelten Ave., Philadelphia 44, Pa.
Lithium Corp. of America, Inc., 2500 Rand Tower, Minneapolis 2, Minn.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Maywood Chemical Works, 111 W. Hunter Ave., Maywood, N. J.
Metal Hydrides, Inc., 12—24 Congress St., Beverly, Mass.
Metallo Chemical Corp., 117 Liberty St., New York 6, N. Y.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.

Magnesium

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Baker Chemical Co., J. T., Phillipsburg, N. J.
Belmont Smelting & Refining Works Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Brooks & Perkins, Inc., 261 Constitution Ave., N. W., Washington 1, D. C.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Dow Chemical Co., Midland, Mich.
ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave., Portland 10, Ore. **ADV. PG. 175**
Electro Metallurgical Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO. 120 Broadway, New York 5, N. Y. **ADV. PG. 111**
Fleischman, Burd & Co., Inc., 22 W. 48th St., New York 36, N. Y.
Mackay Inc. A. D. 198 Broadway, New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt St., St. Louis 7, Mo.
Nalco Metals, Inc., Canaan Conn.
Ver-Lac-Old Chemical Co. 116 Broad St., New York 4, N. Y.

Manganese

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
CAMBRIDGE SMELTING CO., 100 Pacific St., Cambridge, Mass. **ADV. PG. 238**
Cerro de Pasco Sales Corp., 300 Park Ave., New York 22, N. Y.
City Chemical Corp., 132 W. 22nd St., New York, N.Y.
Cominco Metal Sales Div., 215 St. James St., W., Montreal 1, Canada
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
Edlow Lead Co., 729 Bank St., Columbus 16, Ohio
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. **ADV. PG. 111**
General Lead Construction Corp., 1800 Harrison Ave., Kearny, N. J.
Glaser Lead Co., Inc., 31 Wyckoff Ave., Brooklyn 27, N. Y.
KELLEY & CO., O. G., 98 Taylor St., Dorchester, Mass. **ADV. PG. 64, 65**
Knapp Mills, Inc., 23—15 Borden Ave, Long Island City, N. Y.
LEAD PRODUCTS, INC., Hartford Rd., Manchester, Conn. **ADV. PG. 238**
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
National Lead Co., 111 Broadway, New York 6, N. Y.
NUCLEAD, INC., 110 Pacific St., Cambridge, Mass. **ADV. PG. 238**
Ohio Semiconductors, Inc., Columbus, Ohio
RAY-PROOF CORP., 843 Canal St., Stamford, Conn. **ADV. PG. 272**
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. **ADV. PG. 92**
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
VIENER & SONS, HYMAN, 5300 Hatcher St., Dept. NU, Richmond 5, Va. **ADV. PG. 221**

Baker Chemical Co., J. T., Phillipsburg N. J.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp. 132 W. 22nd St., New York, N. Y.
Consolidated Reactive Metals Inc., 43 W. 46th St., New York 46, N. Y.
Crucible Steel Co. of America, Dept. N.B.G., Box 2518, Pittsburgh 3, Pa.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Driver Co., Wilbur B., 1875 McCarter Highway, Newark 4, N. J.
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
Fleischman, Burd & Co., Inc., 22 W. 48th St., New York 36, N. Y.
Foote Mineral Co., 18 W. Chelten Ave. Philadelphia 44, Pa.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Metals & Controls Corp., General Plate Div., 40 Forest St., Attleboro Mass.
RELIANCE INC. 1212 Adams Ave. Philadelphia 24, Pa. ADV. PG. 92
Vanadium Corp. of America, Graybar Bldg., 420 Lexington Ave., New York 17, N. Y.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.

Mercury

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Berk & Co., Inc., F. W., Park Place East, Wood Ridge N. J.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Hill Co., C. R., 35 W. Grand River, Detroit 26, Mich.
Mackay Inc., A. D. 198 Broadway, New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo.
Merlan Instrument Co., The, 10920 Madison Ave., Cleveland 2, Ohio
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.

Molybdenum

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Associated Engineering & Mfg. Corp., Glen Ridge, N. J.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
City Chemical Corp., 132 W. 22nd St., New York N. Y.
Climax Molybdenum Co., Div. of The American Metal Climax, Inc., 500 Fifth Ave., New York 36, N. Y.
CROSS CO. H., 15 Beekman St., New York 38, N. Y. ADV. PG. 253
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Elsler Engineering Co., 760 S. 13th St., Newark 3, N. J.
FANSTEEL METALLURGICAL CORP., North Chicago, Ill ADV. PG. 172
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
Fine Chemical Co., 250 W. 57th St., New York 19, N. Y.
General Electric Co., Lamp Wire & Phosphors Dept., 21800 Tungsten Rd., Cleveland 17, Ohio
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Johnston & Funk Metallurgical Corp., W. Kemrow Ave., Wooster, Ohio
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallory & Co. Inc., P.R., 58 S. Gray St. Indianapolis 6, Ind.
MALLORY-SHARON METALS CORP., Niles, Ohio ADV. PG. 5
Nuclear Metals, Inc., Concord, Mass.
Oregon Metallurgical Corp., P. O. Box 484, Albany Ore.
PHILPS' GLOEILAMPENBABRIEKEN N. V., Eindhoven, Holland ADV. PG. 86
SHIELDALLOY CORP., Newfield, N. J. ADV. PG. 256
Sylvania Electric Products Inc., Chemical & Metallurgical Div., Towanda, Pa.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Wah Chang Corp., 233 Broadway, New York 7, N. Y.

Molybdenum Ribbon

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Alpha Metals Inc., 56 Water St., Jersey City 4, N. J.
American Silver Co., Inc., 36—07 Prince St., Flushing 54, N. Y.
Associated Engineering & Mfg. Co., Glen Ridge, N. J.
CROSS CO., H., 15 Beekman St., New York 38, N. Y. ADV. PG. 253
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
FANSTEEL METALLURGICAL CORP., 2200 Sheridan Rd., North Chicago, Ill. ADV. PG. 172
General Electric Co., Lamp Wire & Phosphors Dept., 21800 Tungsten Rd., Cleveland 17, Ohio.
Sylvania Electric Products Inc., Chemical & Metallurgical Div., Towanda, Pa.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Wah Chang Corp., 233 Broadway, New York 7, N. Y.

Nickel

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Austenal, Inc., 224 E. 39th St., New York 16, N. Y.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Carpenter Steel Co., 107 W. Bern St., Reading, Pa.
Chromium Corp. of America, Box 1229, Waterbury 20, Conn.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Cohn Corp., Sigmund, 121 S. Columbus Ave., Mt. Vernon, N. Y.
Consolidated Reactive Metals Inc., 43 W. 46th St., New York 46, N. Y.
COOPER ALLOY CORP. Blov St. & Ramsey Ave., Hillside 5, N. J. ADV. PG. 56
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Driver Co., Wilbur B., 1875 McCarter Highway, Newark 4, N. J.
Driver-Harris Co., 201 Middlesex St., Harrison, N. J.
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
Fine Chemical Co., 250 W. 57th St., New York 19, N. Y.
Foote Mineral Co., 18 W. Chelten Ave., Philadelphia 44, Pa.
General Alloys Co., 400 W. First St., Boston 27, Mass.
INTERNATIONAL NICKEL CO., INC., 67 Wall St., New York 5, N. Y. ADV. PG. 114
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
National Lead Co., 111 Broadway, New York 6, N. Y.
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Revere Copper & Brass, Inc., 230 Park Ave., New York 17, N. Y.
SHIELDALLOY CORP., Newfield, N. J. ADV. PG. 256
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.

Niobium (Columbium)

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Consolidated Reactive Metals Inc., 43 W. 46th St., New York 46, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Electro Metallurgical Co., Div. of Union Carbide Corp. 30 E. 42nd St., New York 17, N. Y.
FANSTEEL METALLURGICAL CORP., North Chicago, Ill. ADV. PG. 172
Fine Chemical Co., 250 W. 57th St., New York 19, N. Y.
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany
Johnston & Funk Metallurgical Corp., W. Kemrow Ave., Wooster, Ohio
Kawecki Chemical Co., Inc., 220 E. 42nd St., New York, N. Y.
Kennametal, Inc., Latrobe, Pa.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis, Mo.
Metals & Controls Corp., General Plate Div., 40 Forest Ave., Attleboro, Mass.
NUCLEAR MATERIALS & EQUIPMENT CORP., 880 Warren Ave., Apollo, Pa. ADV. PG. 163
Nuclear Metals, Inc., Concord, Mass.
SHIELDALLOY CORP., Newfield, N. J. ADV. PG. 256
Vanadium Corp. of America, Graybar Bldg., 420 Lexington Ave., New York 17, N. Y.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Wah Chang Corp., 233 Broadway, New York 7, N. Y.

Palladium

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36, N. Y.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bishop & Co., J., Platinum Works, Malvern, Pa.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Cohn Corp., Sigmund, 121 S. Columbus Ave., Mt. Vernon, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
Handy & Harman, 82 Fulton St., New York 38, N. Y.
Heraeus GmbH, W. C., 12—14 Heraeusstr. Hanau, Germany
Mackay Inc. A. D., 198 Broadway, New York 38, N. Y.
Mallory & Co., Inc., P.R., 58 S. Gray St., Indianapolis 6, Ind.
Metals & Controls Corp., General Plate Div. 40 Forest St., Attleboro, Mass.
Metz Refining Co., 369 Mulberry St., Newark 2, N. J.
Ney Co., J. M., Drawer 990, Hartford, Conn.
Phelps Dodge Copper Products Corp., 300 Park Ave., New York 22 N. Y.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.

Platinum

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36, N. Y.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Bios Laboratories, Inc., 17 W. 60th St. New York 23, N. Y.
Bishop & Co., J., Platinum Works, Malvern, Pa.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 2nd St., New York, N. Y.
Cohn Corp., Sigmund, 121 S. Columbus Ave., Mt. Vernon, N. Y.
Consolidated Reactive Metals, Inc., 43 W. 46th St., New York 46, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
Fine Chemical Co., 250 W. 57th St., New York 19, N. Y.
Handy & Harman, 82 Fulton St., New York 38, N. Y.
Heraeus GmbH W. C., 12—14 Heraeusstr., Hanau, Germany
Mackay Inc. A. D. 198 Broadway, New York 38, N. Y.
Metals & Controls Corp., General Plate Div., 40 Forest St., Attleboro, Mass.
Metz Refining Co., 369 Mulberry St. Newark 2, N. J.
Ney Co., J. M. Drawer 990, Hartford, Conn.
Phelps Dodge Copper Products Corp. 300 Park Ave., New York 22, N. Y.
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.

Plutonium

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV PG 169
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Bios Laboratories, Inc., 17 W. 60th St. New York 23, N. Y.
Delta Chemical Works 21 W. 60th St., New York 23, N. Y.

Polonium

ATOMIC RESEARCH LABORATORY 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Canadian Radium & Uranium Corp. 630 Fifth Ave., New York 20, N. Y.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Delta Chemical Works 21 W. 60th St., New York 23, N. Y.
UNITED STATES RADIUM CORP., P. O. Box 246, Morristown, N. J. ADV. PG. 223

Potassium

Alloys Unlimited, Inc. 44—13 Vernon Blvd., Long Island City 1, N. Y.
Bios Laboratories, Inc. 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co. 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Delta Chemical Works, 21 W. 60th St. New York 23, N. Y.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.

Praseodymium

Alloys Unlimited, Inc. 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Electro Metal Div. of Firth Sterling, Inc., 320 Yonkers Ave., Yonkers N. Y.
American Potash & Chemical Corp., 3030 W. 6th St., Los Angeles 54, Calif.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Borolite Corp., 330 Yonkers Ave., Yonkers, N. Y.
Bram Metallurgical-Chemical Co. 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St. New York, N. Y.
Davison Chemical Div. of W. R. Grace Co., Rare Earths Dept., Box 488, Pompton Plains, N. J.
Delta Chemical Works 21 W. 60th St., New York 23, N. Y.
Fine Chemical Co. Inc., 250 W. 57th St., New York 19, N. Y.
Gows Chemical Co., Inc., The, P. O. Box 443, Laramie, Wy.
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
LINDSAY CHEMICAL CO., 272 Ann St., West Chicago, Ill. ADV. PG. 6
Mackay Inc. A. D., 198 Broadway, New York 38, N. Y.
Maywood Chemical Works, 111 W. Hunter Ave., Maywood, N. J.
Metallo Chemical Corp., 117 Liberty St., New York 6 N. Y.
MICHIGAN CHEMICAL CORP., RARE EARTH & THORIUM DIV., St. Louis, Mo. ADV. PG. 174
Nuclear Corp. of America, Inc., 400 Park Ave. New York 17, N. Y.
Research Chemicals, Inc., Box 431, Burbank, Calif.
St. Eloi Corp., Box 507, Newtown Station Cincinnati 44, Ohio
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Vitro Corp. of America, 261 Madison Ave., New York, N. Y.

Radium

ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bishop & Co., J., Platinum Works, Malvern, Pa.
Canadian Radium & Uranium Corp., 630 Fifth Ave., New York 20, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
RADIUM CHEMICAL CO., 141 E. 42nd St., New York 17, N. Y. ADV. PG. 241
UNITED STATES RADIUM CORP., P. O. Box 246, Morristown, N. J. ADV. PG. 223
Vitro Corp. of America, 261 Madison Ave., New York, N. Y.

Rhenium

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
St. Eloi Corp., Box 507, Newton Station, Cincinnati 44, Ohio
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.

Samarium

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Electro Metal Div. of Firth Sterling, Inc., 320 Yonkers Ave., Yonkers, N. Y.
American Potash & Chemical Corp., 3030 W. 6th St., Los Angeles 54, Calif.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Borolite Corp., 320 Yonkers Ave., Yonkers, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Davison Chemical Div. of W. R. Grace Co., Rare Earths Dept., Box 488, Pompton Plains, N. J.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Fine Chemical Co., Inc., 250 W. 57th St., New York 19, N. Y.
Gows Chemical Co., Inc., The, P. O. Box 443, Laramie, Wy.
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
LINDSAY CHEMICAL CO., 272 Ann St., West Chicago, Ill. ADV. PG. 6
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Metallo Chemical Corp., 117 Liberty St., New York, N. Y.
MICHIGAN CHEMICAL CORP., RARE EARTH & THORIUM DIV., St. Louis, Mo. ADV. PG. 174
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Research Chemicals, Inc., Box 431, Burbank, Calif.
St. Eloi Corp., Box 507, Newtown Station, Cincinnati 44, Ohio
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.

Selenium

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36, N. Y.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Baker & Adamson Products, General Chemical Div., Allied Chemical Corp., 40 Rector St., New York 6, N. Y.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn 7, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Cerro de Pasco Sales Corp., 300 Park Ave., New York 22, N. Y.
Chase Brass & Copper Co., Inc., 236 Grand St., Waterbury 20, Conn.
City Chemical Corp., 122 W. 22nd St., New York, N. Y.
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
Fleischman, Burd & Co., Inc., 22 W. 48th St., New York 36, N. Y.
Kawecki Chemical Co., Inc., 220 E. 42nd St., New York, N. Y.
Mackay, Inc., A. D., 198 Broadway, New York 38, N. Y.
Phelps Dodge Copper Products Corp., 300 Park Ave., New York 22, N. Y.
Sarkes Tarzian, Inc., Rectifier Div., 415 N. College Ave., Bloomington, Ind.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.

Silicon

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Andrew Co., Otis, 231—233 W. Court St., Cincinnati 2, Ohio
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn 7, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 122 W. 22nd St., New York, N. Y.
Du Pont de Nemours & Co., Inc., E. I., Wilmington 98, Del.
Electro Metallurgical Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
Fine Chemical Co., Inc., 250 W. 57th St., New York 19, N. Y.
Foote Mineral Co., 18 W. Chelten Ave., Philadelphia 44, Pa.
Mackay, Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis, Mo.
Merck & Co., Inc., Chemical Div., 126 E. Lincoln Ave., Rahway, N. J.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Sarkes Tarzian, Inc., Rectifier Div., 415 N. College Ave., Bloomington, Ind.
Sylvania Electric Products Inc., Chemical & Metallurgical Div., Towanda, Pa.
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas
Vanadium Corp. of America, Graybar Bldg., 420 Lexington Ave., New York 17, N. Y.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.

Silver

Alloys Unlimited Inc. 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36, N. Y.
American Silver Co. 36—07 Prince St., Flushing 54, N. Y.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Anchor Metal Co. Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn 7, N. Y.
Bios Laboratories Inc., 17 W. 60th St., New York 23, N. Y.
Bishop & Co., J., Platinum Works, Malvern, Pa.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Cerro de Pasco Sales Corp. 300 Park Ave., New York 22, N. Y.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Cominco Metal Sales Div., 215 St. James St. W., Montreal 1, Canada
Consolidated Reactive Metals, Inc., 43 W. 46th St., New York 46, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Engelhard Industries, Inc., 113 Astor St. Newark 2, N. J.
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
Handy & Harman, 82 Fulton St., New York 38, N. Y.
Heraeus GmbH., W. C. 12—14 Heraeusstr., Hanau Germany
Mackay Inc. A. D., 198 Broadway, New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts. St. Louis 7, Mo.
Mallory & Co., Inc., P. R., 58 S. Gray St., Indianapolis 6, Ind.
Metals & Controls Corp. General Plate Div., 40 Forest St. Attleboro, Mass.
Metz Refining Co., 369 Mulberry St., Newark 2, N. J.
Ney Co., J. M. Drawer 990 Hartford, Conn.
NUCLEAR MATERIALS & EQUIPMENT CORP., 680 Warren Ave., Apollo, Pa. ADV. PG. 163
Phelps Dodge Copper Products Corp., 300 Park Ave., New York 22, N. Y.
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Ver-Lac-Old Chemical Co. 116 Broad St., New York 4, N. Y.
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.

Sodium

Alloys Unlimited, Inc. 44—13 Vernon Blvd., Long Island City 1, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Du Pont de Nemours & Co., Inc., E. I., Wilmington 98, Del.
Mackay, Inc., A. D. 198 Broadway, New York 38, N. Y.
U. S. Industrial Chemicals Co., Div. of National Distillers & Chemical Corp., 99 Park Ave., New York 16, N. Y.

Steel, Carbon

American Cast Iron Pipe Co., Special Products Div., 2930 N. 16th St., Birmingham, Ala.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Armco Steel Corp., Middletown, Ohio
Austenal Inc., 224 E. 39th St., New York 16, N. Y.
Bios Laboratories Inc., 17 W. 60th St., New York 23, N. Y.
Carpenter Steel Co. The, 107 W. Bern St., Reading Pa.
Crucible Steel Co. of America, Dept. N.B.G., Box 2518 Pittsburgh 30, Pa.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
ELECTRIC STEEL FOUNDRY CO. 2165 NW 25th Ave., Portland 10, Ore. ADV. PG. 175
Firth Sterling Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Lukens Steel Co., 266 Lukens Bldg., Coatesville, Pa.
MALLORY-SHARON METALS CORP., Niles, Ohio ADV. PG. 5
Republic Steel Corp., 1441 Republic Bldg., Cleveland 14, Ohio
Ryerson & Son, Inc. Joseph T., P. O. Box 8000-A, Chicago Ill.

SANDUSKY FOUNDRY & MACHINE CO. W. Market St., Sandusky, Ohio ADV. PG. 147
SUPERIOR STEEL DIV. OF COPPERWELD STEEL CO., Carnegie Pa. ADV. PG. 12
T. I. NUCLEAR ENGINEERING LTD., The Adelphi London, W. C. 2, England ADV. PG. 66
U. S. PIPE & FOUNDRY CO., STEEL & TUBES Div., Burlington, N. J. ADV. PG. 14, 15
United States Steel Corp., 525 William Penn Place, Pittsburgh 30 Pa.

Steel, Stainless

ALLEGHENY LUDLUM STEEL CORP., Oliver Bldg., Room 2020, Pittsburgh 22, Pa. ADV. PG. 109
All-Stainless Inc., 40 Rugg Road, Allston 34, Mass.
American Cast Iron Pipe Co., Special Products Div., 2930 N. 16th St., Birmingham, Ala.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Armco Steel Corp., Middletown, Ohio
Austenal, Inc., 224 E. 39th St., New York 16, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
CARLSON, INC., G. O., Thorndale, Pa. ADV. PG. 112
Carpenter Steel Co., Alloy Tube Div., Union, N. J.
Carpenter Steel Co, The, 107 W. Bern St., Reading, Pa.
Chase Brass & Copper Co. Inc., 236 Grand St., Waterbury 20, Conn.
Chromalloy Corp., 460 Tarrytown Rd., White Plains, N. Y.
COOPER ALLOY CORP., Bloy St. & Ramsey Ave., Hillside 5, N. J. ADV. PG. 56
Crucible Steel Co. of America, Dept. N.B.G., Box 2518, Pittsburgh 30, Pa.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Driver Co., Wilbur B., 1875 McCarter Highway, Newark 4, N. J.
Driver-Harris Co., 201 Middlesex St., Harrison, N. J.
ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave., Portland 10, Ore. ADV. PG. 175
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
General Alloys Co., 400 W. First St., Boston 27, Mass.
Lukens Steel Co., 266 Lukens Bldg., Coatesville, Pa.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallory & Co., Inc., P. R., 58 S. Gray St., Indianapolis 6, Ind.
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio
Ryerson & Son, Inc., Joseph T., P. O. Box 8000-A, Chicago, Ill.
SANDUSKY FOUNDRY & MACHINE CO., W. Market St., Sandusky, Ohio ADV. PG. 147
SUPERIOR STEEL DIV. OF COPPERWELD STEEL CO., Carnegie, Pa. ADV. PG. 12
U. S. PIPE & FOUNDRY CO., STEEL & TUBES DIV., Burlington, N. J. ADV. PG. 14, 15
United States Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa.
Wallingford Steel Co., 80 Valley St., Wallingford, Conn.
Washington Steel Corp., 60 S. Woodland Ave., Washington, Pa.
WISCONSIN STAINLESS FOUNDRY & MACHINE CORP., 823 E. St. Paul Ave., Waukesha, Wis. ADV. PG. 255

Strontium

Alloys Unlimited, Inc., 44-13 Vernon Blvd., Long Island City 1, N. Y.
Barium & Chemicals, Inc., Willoughby, Ohio
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
King Laboratories, Inc., 127 Solar St., Syracuse 3, N. Y.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.

Tantalum

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Associated Engineering & Mfg. Co., Glen Ridge, N. J.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bishop & Co., J., Platinum Works, Malvern, Pa.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
CROSS CO., H., 115 Beekman St., New York 38, N. Y. ADV. PG. 253
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Electro Metallurgical Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
Fansteel Metallurgical Corp., North Chicago, Ill.
Fine Chemical Co., 250 W. 57th St., New York 19, N. Y.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Heraeus GmbH, W. C., 12-14 Heraeusstr., Hanau, Germany
Johnston & Funk Metallurgical Corp., W. Kemrow Ave., Wooster, Ohio
Kawecki Chemical Co., Inc., 220 E. 42nd St., New York, N. Y.
Kennametal, Inc., Latrobe, Pa.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis, Mo.
MALLORY-SHARON METALS CORP., Niles, Ohio ADV. PG. 5
Metals & Controls Corp., General Plate Div., 40 Forest St., Attleboro, Mass.
National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.
SHIELDALLOY CORP., Newfield, N. J. ADV. PG. 256
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Wah Chang Corp., 233 Broadway, New York 7, N. Y.

Thorium

American Electro Metal Div. of Firth Sterling, Inc., 320 Yonkers Ave. Yonkers, N. Y.
American Potash & Chemical Corp., 3030 W. 6th St., Los Angeles 54, Calif.
Bios Laboratories, Inc. 17 W. 60th St., New York 23 N. Y.
Borolite Corp. 320 Yonkers Ave., Yonkers, N. Y.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
DAVISON CHEMICAL DIV. OF W. R. GRACE CO., REACTOR MATERIALS PLANT P. O. Box 218, Erwin, Tenn. ADV. PG. 154
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Firth Sterling Inc., 3113 Forbes St., Pittsburgh 30, Pa.
LINDSAY CHEMICAL CO., 272 Ann St., West Chicago, Ill. ADV. PG. 6
M & C NUCLEAR, INC. 40 Forest St., Attleboro, Mass. ADV. PG. 177
Mackay Inc. A. D., 198 Broadway, New York 38, N. Y.
Metal Hydrides Inc., 12—24 Congress St. Beverly, Mass.
Metallo Chemical Corp., 117 Liberty St., New York 6, N. Y.
National Lead Co., 111 Broadway New York 6, N. Y.
New Process Metals, Inc. 45—65 Manufacturers Place, Newark 5, N. J.
NUCLEAR MATERIALS & EQUIPMENT CORP., 680 Warren Ave. Apollo, Pa. ADV. PG. 163
Nuclear Metals, Inc., Concord, Mass.
Rio Tinto Group The, Barrington House, Love Lane, London E. C. 2, England
St. Eloi Crop., Box 507, Newtown Station Cincinnati 44, Ohio
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Vitro Corp. of America, 261 Madison Ave., New York, N. Y.

Tin

Alloys Unlimited, Inc. 44—13 Vernon Blvd., Long Island City 1, N. Y.
Alpha Metals Inc., 56 Water St., Jersey City 4, N. J.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36, N. Y.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Anchor Metal Co., Inc., 966 Meeker St., Brooklyn 22, N. Y.
Baker Chemical Co., J. T., Phillipsburg N. J.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc., 17 W. 60th St. New York 23, N. Y.
CAMBRIDGE SMELTING CO. 100 Pacific St., Cambridge, Mass ADV. PG. 238
City Chemical Corp. 132 W. 22nd St., New York, N. Y.
Cominco Metal Sales Div., 215 St. James St., W., Montreal 1, Canada
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
FEDERATED METALS DIV. AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
Fleischman, Burd & Co., Inc. 22 W. 48th St., New York 36, N. Y.
Laboratory Equipment Corp., St. Joseph, Mich.
LEAD PRODUCTS INC., Hartford Rd., Manchester, Conn. ADV. PG. 238
Mackay Inc. A. D., 198 Broadway, New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7 Mo.
National Lead Co., 111 Broadway, New York 6, N. Y.
NUCLEAD, INC. 110 Pacific St., Cambridge, Mass. ADV. PG. 238
RELIANCE, INC., 1212 Adams Ave. Philadelphia 24, Pa. ADV. PG. 92
Ver-Lac-Old Chemical Co., 116 Broad St., New York, 4, N. Y.
VIENER & SONS, HYMAN, 5300 Hatcher St., Dept. Nu, Richmond 5, Va. ADV. PG. 221

Titanium

Alloys Unlimited Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Associated Engineering & Mfg. Co., Glen Ridge, N. J.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Cremical Co., 820 65th Ave., Philadelphia 2, Pa.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
COOPER ALLOY CORP., Bloy St. & Ramsey Ave., Hillside 5, N. J. ADV. PG. 56
Crucible Steel Co. of America, Dept. N.B.G., Box 2518 Pittsburgh 30, Pa.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Du Pont de Nemours & Co., Inc., E. I. Wilmington 98, Del.
ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave., Portland 10, Ore. ADV. PG. 175
Electro Metallurgical Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
Firth Sterling Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Foote Mineral Co., 18 W. Chelten Ave., Philadelphia 44, Pa.
HARVEY ALUMINUM, 19200 S. Western Ave., Torrance, Calif. ADV. PG. 59
Heraeus GmbH W. C., 12—14 Heraeusstr., Hanau, Germany
Johnston & Funk Metallurgical Corp., W. Kemrow Ave., Wooster, Ohio
M & C NUCLEAR, INC., 40 Forest St., Attleboro, Mass. ADV. PG. 177
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallory & Co., Inc., P.R., 58 S. Gray St., Indianapolis 6, Ind.
MALLORY-SHARON METALS CORP., Niles, Ohio ADV. PG. 5
Metal Hydrides, Inc., 12—24 Congress St. Beverly, Mass.
Metals & Controls Corp., General Plate Div., 40 Forest St., Attleboro, Mass.
National Lead Co., 111 Broadway, New York 6, N. Y.
Oregon Metallurgical Corp., P. O. Box 484, Albany, Ore.
Rem-Cru Titanium, Inc., Midland, Pa.
Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio
SHIELDALLOY CORP., Newfield 6, N. J. ADV. PG. 256
SUPERIOR STEEL DIV. OF COPPERWELD STEEL CO., Carnegie, Pa. ADV. PG. 12
Titanium Metals Corp. of America, 233 Broadway, New York 7, N. Y.
Vanadium Corp. of America, Graybar Bldg., 420 Lexington Ave., New York 17, N. Y.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.

Tungsten

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36, N. Y.
Associated Engineering & Mfg. Corp., Glen Ridge, N. J.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc, 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
CROSS CO., H., 15 Beekman St., New York 38, N. Y. ADV. PG. 253
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Eisler Engineering Co., 760 S. 13th St., Newark 3, N. J.

Electro Metallurgical Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
FANSTEEL METALLURGICAL CORP., North Chicago, Ill. ADV. PG. 172
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Fleischman, Burd & Co., Inc., 22 W. 48th St., New York 36, N. Y.
General Electric Co., Lamp Wire & Phosphors Dept., 21800 Tungsten Rd., Cleveland 17, Ohio
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Johnston & Funk Metallurgical Corp., W. Kemrow Ave., Wooster, Ohio
Kennametal, Inc., Latrobe, Pa.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
MALLORY-SHARON METALS CORP., Niles, Ohio ADV. PG. 5
PHILIPS' GLOEILAMPENFABRIEKEN, N. V. Eindhoven, Holland ADV. PG. 86
SHIELDALLOY CORP., Newfield, N. J. ADV. PG. 256
Sylvania Electric Products Inc., Chemical & Metallurgical Div., Towanda, Pa.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Wah Chang Corp., 233 Broadway, New York 7, N. Y.

Tungsten Ribbon

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Associated Engineering & Mfg. Corp., Glen Ridge, N. J.
CROSS CO., H., 15 Beekman St., New York 38, N. Y. ADV. PG. 253
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Eisler Engineering Co., 760 S. 13th St., Newark 3, N. J.
FANSTEEL METALLURGICAL CORP., 2200 Sheridan Rd., North Chicago, Ill. ADV. PG. 172
General Electric Co., Lamp Wire & Phosphors Dept., 21800 Tungsten Rd., Cleveland 17, Ohio
Sylvania Electric Products Inc., Chemical & Metallurgical Div., Towanda, Pa.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Wah Chang Corp., 233 Broadway, New York 7, N. Y.

Uranium—Depleted

American Lava Corp., Titania Div., Manufacturers Rd., Chattanooga 5, Tenn.
DAVISON CHEMICAL DIV. OF W. R. GRACE CO., REACTOR MATERIALS PLANT, P. O. Box 218, Erwin, Tenn. ADV. PG. 154
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis, Mo.
National Lead Co., 111 Broadway, New York 6, N. Y.
NUCLEAR MATERIALS & EQUIPMENT CORP., 680 Warren Ave., Apollo, Pa. ADV. PG. 163
Shattuck Chemical Co., S.W., Denver, Colo.

Uranium—Enriched

ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
DAVISON CHEMICAL DIV. OF W. R. GRACE CO., REACTOR MATERIALS PLANT, P. O. Box 218, Erwin, Tenn. ADV. PG. 154
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
M & C NUCLEAR, INC., 40 Forest St., Attleboro, Mass. ADV. PG. 177
Mackay, Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo.
National Lead Co., 111 Broadway, New York 6, N. Y.
NUCLEAR MATERIALS & EQUIPMENT CORP., 680 Warren Ave., Apollo, Pa. ADV. PG. 163
Nuclear Metals, Inc., Concord, Mass.
Oregon Metallurgical Corp., P. O. Box 484, Albany, Ore.

Uranium, Natural

See also FUEL ELEMENTS—Nuclear

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
DAVISON CHEMICAL DIV. OF W. R. GRACE CO., REACTOR MATERIALS PLANT, P. O. Box 218, Erwin, Tenn. ADV. PG. 154
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
M & C NUCLEAR, INC., 40 Forest St., Attleboro, Mass. ADV. PG. 177
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo.
National Lead Co., 111 Broadway, New York 6, N. Y.
NUCLEAR MATERIALS & EQUIPMENT CORP., 680 Warren Ave., Apollo, Pa. ADV. PG. 163
Nuclear Metals, Inc., Concord, Mass.
Oregon Metallurgical Corp., P. O. Box 484, Albany, Ore.
Rio Tinto Group, The, Barrington House, Love Lane, London, E. C. 2, England
Vanadium Corp. of America, Graybar Bldg., 420 Lexington Ave., New York 17, N. Y.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Vitro Corp. of America, 261 Madison Ave., New York, N. Y.

Vanadium

American Silver Co. 36—07 Prince St., Flushing 54, N. Y.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc. 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Electro Metallurgical Co., Div. of Union Carbide Corp. 30 E. 42nd St., New York 17, N. Y.
M & C NUCLEAR, INC., 40 Forest St., Attleboro Mass. ADV. PG. 177
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
MALLORY-SHARON METALS CORP., Niles, Ohio ADV. PG. 5
Metals & Controls Corp., General Plate Div., 40 Forest St., Attleboro, Mass.
Nuclear Metals, Inc. Concord, Mass.
Oregon Metallurgical Corp., P. O. Box 484, Albany, Ore.
SHIELDALLOY CORP., Newfield, N. J. ADV. PG. 256
Vanadium Corp. of America Graybar Bldg., 420 Lexington Ave., New York 17, N. Y.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.

Zinc

Alloys Unlimited Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36 N. Y.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Ames Metal Products Co., 4323 S. Western Ave., Chicago Ill.
Anchor Metal Co., Inc., 966 Meeker St., Brooklyn 22, N. Y.
Baker Chemical Co., J. T. Phillipsburg, N. J.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories Inc. 17 W. 60th St., New York 23, N. Y.
Cerro de Pasco Sales Corp., 300 Park Ave. New York 22, N. Y.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Cominco Metal Sales Div., 215 St. James St., W., Montreal 1, Canada
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Eagle-Picher Co., Cincinnati, Ohio
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts., St. Louis 7, Mo.
National Lead Co. 111 Broadway, New York 6, N. Y.
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Ver-Lac-Old Chemical Co., 116 Broad St. New York 4, N. Y.
VIENER & SONS, HYMAN, 5300 Hatcher St., Dept. NU, Richmond 5, Va. ADV. PG. 221

Zirconium

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Silver Co., 36—07 Prince St. Flushing 54, N. Y.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co. 820 65th Ave., Philadelphia 26, Pa.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
Brooks & Perkins Inc., 261 Constitution Ave., N. W. Washington D. C.
CARBORUNDUM METALS CO., DIV. OF THE CARBORUNDUM CO., P. O. Box 32, Akron, N. Y. ADV. PG. 54, 55
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
COLUMBIA-NATIONAL CORP., 70 Memorial Drive, Cambridge 42, Mass. ADV. PG. 105
Consolidated Reactive Metals, Inc., 43 W. 46th St., New York 46, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave., Portland 10, Ore. ADV. PG. 175
Electro Metallurgical Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30 Pa.
Foote Mineral Co. 18 W. Chelten Ave., Philadelphia 44, Pa.
HARVEY ALUMINUM, 19200 S. Western Ave., Torrance, Calif. ADV. PG. 59
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany
Johnston & Funk Metallurgical Corp., W. Kemrow Ave., Wooster, Ohio
M & C NUCLEAR, INC., 40 Forest St., Attleboro, Mass. ADV. PG. 177
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallory & Co., Inc., P.R., 58 S. Gray St., Indianapolis 6, Ind
MALLORY-SHARON METALS CORP., Niles, Ohio ADV. PG. 5
Metal & Thermit Corp., Rahway, N. J.
Metal Hydrides, Inc., 12—24 Congress St., Beverly, Mass.
Metals & Controls Corp. General Plate Div., 40 Forest St., Attleboro, Mass.
NUCLEAR MATERIALS & EQUIPMENT CORP., 680 Warren Ave., Apollo, Pa. ADV. PG. 163
National Lead Co., 111 Broadway, New York 6, N. Y.
Nuclear Metals, Inc. Concord Mass.
Oregon Metallurgical Corp., P. O. Box 484, Albany, Ore.
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
SHIELDALLOY CORP., Newfield, N. J. ADV. PG. 256
SUPERIOR STEEL DIV. OF COPPERWELD STEEL CO., Carnegie, Pa. ADV. PG. 12
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Wallingford Steel Co., 80 Valley St., Wallingford, Conn.

METALS—Clad

ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
ALLEGHENY LUDLUM STEEL CORP., Oliver Bldg., Room 2020, Pittsburgh 22, Pa. ADV. PG. 109
Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Aluminum Co. of America, Alcoa Bldg., Pittsburgh 19, Pa.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Associated Engineering & Mfg. Corp., Glen Ridge, N. J.
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bishop & Co., J., Platinum Works, Malvern, Pa.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
Chicago Bridge & Iron Co., 1305 W. 105th St., Chicago 43, Ill.
Chromalloy Corp., 450 Tarrytown Rd., White Plains, N. Y.
CLEVELAND HARD FACING, 3047 Stillson Ave., Cleveland 5, Ohio. ADV. PG. 42
Cominco Metal Sales Div., 215 St. James St., W., Montreal 1, Canda
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
Driver Co., Wilbur B., 1875 McCarter Highway, Newark 4, N. J.
ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave. Portland 10, Ore. ADV. PG. 175
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
FANSTEEL METALLURGICAL CORP., North Chicago, Ill. ADV. PG. 172
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
General Alloys Co., 400 W. First St., Boston 27, Mass.
Knapp Mills, Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
Lukens Steel Co., 266 Lukens Bldg., Coatesville, Pa.
M & C NUCLEAR, INC., 40 Forest St., Attleboro, Mass. ADV. PG. 177
Mackay, Inc., A. D., 198 Broadway, New York 38, N. Y.
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
Metals & Controls Corp., General Plate Div., 40 Forest St., Attleboro, Mass.
National Lead Co., 111 Broadway, New York 6, N. Y.
Nuclear Metals, Inc., Concord, Mass.
PERFECTION MICA CO., MAGNETIC SHIELD DIV., 1322 N. Elston Ave., Chicago 22, Ill. ADV. PG. 234
Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio
SUPERIOR STEEL DIV. OF COPPERWELD STEEL CO., Carnegie, Pa. ADV. PG. 12
Treadwell Co., Midland, Pa.
U.S. PIPE & FOUNDRY CO., STEEL & TUBES DIV., Burlington, N. J. ADV. PG. 14, 15

METALS—Foil

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Alexander Vacuum Research Inc., 285 Madison Ave., New York 17, N. Y.
Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Alpha Metals, Inc., 56 Water St., Jersey City 4, N. J.
Aluminum Co. of America, Alcoa Bldg., Pittsburgh 19, Pa.
American Brass Co., Waterbury 20, Conn.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Ames Metal Products Co., 4323 Western Ave., Chicago III.
Anchor Metal Co., 966 Meeker Ave., Brooklyn 22, N. Y.
Arnold Engineering Co., Marengo, III.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bishop & Co., J., Platinum Works, Malvern, Pa.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Chromium Corp. of America, Box 1229, Waterbury 20, Conn.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Cominco Metal Sales Div., 215 St. James St., W., Montreal 1, Canada
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
Driver Co., Wilbur B., 1875 McCarter Highway, Newark 4, N. J.
Driver-Harris Co., 201 Middlesex St., Harrison, N. J.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Johnston & Funk Metallurgical Corp., W. Kemrow Ave., Wooster, Ohio
M & C NUCLEAR, INC., 40 Forest St., Attleboro, Mass. ADV. PG. 177
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
MALLORY-SHARON METALS CORP., Niles, Ohio ADV. PG. 5
Metals & Controls Corp., General Plate Div., 40 Forest Ave., Attleboro, Mass.
MICHIGAN CHEMICAL CORP., RARE EARTH & THORIUM DIV., St. Louis, Mo. ADV. PG. 174
Ney Co., J. M., Drawer 990, Hartford 2, Conn.
Revere Copper & Brass, Inc., 230 Park Ave., New York 17, N. Y.
St. Eloi Corp., Box 507, Newtown Station, Cincinnati 44, Ohio
UNITED STATES RADIUM CORP., P. O. Box 246, Morristown, N. J. ADV. PG. 223
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Wah Chang Corp., 233 Broadway, New York 7, N. Y.
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.

METALS—High Density Alloy

AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, III.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc., 17 W. 60th St. ,New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Cerro de Pasco Sales Corp., 300 Park Ave., New York 22, N. Y.
Crucible Steel Co. of America, Dept. N.B.G., Box 2518, Pittsburgh 30, Pa.
DAVISON CHEMICAL DIV. OF W. R. GRACE CO., REACTOR MATERIALS PLANT, P. O. Box 218, Erwin, Tenn. ADV. PG. 154
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave., Portland 10, Ore. ADV. PG. 175
FANSTEEL METALLURGICAL CORP., North Chicago, III. ADV. PG. 172
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
General Electric Co., Metallurgical Products Dept., 11139 E. Eight Mile Blvd., Detroit 32, Mich.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
INTERNATIONAL NICKEL CO., INC., 67 Wall St., New York 5, N. Y. ADV. PG. 114
Kennametal Inc., Latrobe, Pa.
Knapp Mills, Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
Mackay Inc. A. D., 198 Broadway, New York 38, N. Y.
Ney Co., J. M., Drawer 990, Hartford 2, Conn.
Nuclear Metals, Inc., Concord Mass.
Oregon Metallurgical Corp. P. O. Box 484, Albany, Ore.
Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio
Revere Copper & Brass, Inc., 230 Park Ave., New York 17, N. Y.
SANDUSKY FOUNDRY & MACHINE CO., W. Market St., Sandusky, Ohio ADV. PG. 147
Sintercast Corp. of America, 134 Woodworth Ave., Yonkers, N. Y.
U. S. PIPE & FOUNDRY CO., STEEL & TUBES DIV., Burlington, N. J. ADV. PG. 14, 15
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.
WISCONSIN STAINLESS FOUNDRY & MACHINE CORP., 823 E. St. Paul Ave., Waukesha, Wis. ADV. PG. 255

METALS—Laminated

Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Anchor Metal Co.,, Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Bios Laboratories, Inc. 17 W. 60th St., New York 23, N. Y.
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
Keller Products, Inc., 41 Union St., Manchester, N. H.
Knapp Mills Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
Metals & Controls Corp. General Plate Div., 40 Forest St., Attleboro, Mass.
Nuclear Metals, Inc., Concord, Mass.
PERFECTION MICA CO., MAGNETIC SHIELD DIV., 1322 N. Elston Ave., Chicago 22 III. ADV. PG. 234
RAY-PROOF CORP., 843 Canal St., Stamford, Conn. ADV. PG. 272

METALS—Powdered

Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.
Aluminum Co. of America, Alcoa Bldg., Pittsburgh 19, Pa.
American Electro Metal Div. of Firth Sterling, Inc., 320 Yonkers Ave., Yonkers, N. Y.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36, N. Y.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, III.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Antara Chemicals Div. of General Aniline & Film Corp., 435 Hudson St., New York 14, N. Y
Associated Engineering & Mfg. Corp., Glen Ridge, N. J.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
BENDIX AVIATION CORP., Fisher Bldg. Detroit 2, Mich. ADV. PG. 144, 145
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Borolite Corp., 320 Yonkers Ave., Yonkers, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Cominco Metal Sales Div., 215 St. James St., W., Montreal 1, Canada
Cuno Engineering Corp., 80 S. Vine St., Meriden, Conn.
DAVISON CHEMICAL DIV. OF W. R. GRACE CO., REACTOR MATERIALS PLANT, P. O. Box 218, Erwin, Tenn. ADV. PG. 154
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
Electro Metallurgical Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
FANSTEEL METALLURGICAL CORP., North Chicago, III. ADV. PG. 172
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Foote Mineral Co., 18 W. Chelten Ave., Philadelphia 44, Pa.
Handy & Harman, 82 Fulton St., New York 38, N. Y.
Indium Corp. of America, 1676 Lincoln Ave., Utica 4, N. Y.
Kawecki Chemical Co., Inc., 220 E. 42nd St., New York, N. Y.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Mallory & Co., Inc., P. R. 58 S. Gary St. Indianapolis 6 Ind
Metal Hydrides, Inc., 12—24 Congress St., Beverly, Mass.
METALS DISINTEGRATING CO., INC., P. O. Box 290, Elizabeth, N. J. ADV. PG. 237
Metz Refining Co., 369 Mulberry St., Newark 2, N. J.
National Lead Co., 111 Broadway, New York 6, N. Y.
National Moldite Co., 250 South St., Newark, N. J.
Nuclear Metals Inc., Concord, Mass.
PERFECTION MICA CO., MAGNETIC SHIELD DIV., 1322 N. Elston Ave., Chicago 22, III. ADV. PG. 234
Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio
Sintercast Corp. of America, 134 Woodworth Ave., Yonkers, N. Y.
Sylvania Electric Products Inc., Chemical & Metallurgical Div., Towanda, Pa.
Titanium Metals Corp. of America, 233 Broadway, New York 7, N. Y.
U. S. Graphite Co., Div. of The Wickes Corp., Holland Ave., Saginaw 5, Mich.
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
Wah Chang Corp., 233 Broadway, New York 7, N. Y.
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.

METALS—Vacuum Melted

ALLEGHENY LUDLUM STEEL CORP., Oliver Bldg., Room 2020, Pittsburgh 22, Pa. ADV. PG. 109
Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Associated Engineering & Mfg. Co., Glen Ridge, N. J.
Austenal, Inc., 224 E. 39th St., New York 16, N. Y.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn, N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Cominco Metal Sales Div., 215 St. James St., W., Montreal 1, Canada
COOPER ALLOY CORP., Bloy St. & Ramsey Ave., Hillside 5, N. J. ADV. PG. 56
Crucible Steel Co. of America, Dept. N.B.G., Box 2518, Pittsburgh 30, Pa.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
DAVISON CHEMICAL DIV. OF W. R. GRACE CO., REACTOR MATERIALS PLANT, P. O. Box 218, Erwin, Tenn. ADV. PG. 154
Driver Co., Wilbur B., 1875 McCarter Highway, Newark 4, N. J.
Driver-Harris Co., 201 Middlesex St., Harrison, N. J.
ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave., Portland 10, Ore. ADV. PG. 175
Electro Metallurgical Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
Firth Sterling Ave., 3113 Forbes St., Pittsburgh 30, Pa.
General Electric Co., Metallurgical Products Dept., 11139 E. Eight Mile Blvd., Detroit 32, Mich.
Handy & Harman, 82 Fulton St., New York 38, N. Y.
Haynes Stellite Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York, N. Y.
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hannau, Germany
Johnston & Funk Metallurgical Corp., W. Kemrow Ave., Wooster, Ohio
Kinetics Corp., 2 Churchill Rd., Hingham, Mass.
Leitz, Inc., E., 468 Fourth Ave., New York, N. Y.
Lithium Corp. of America, Inc., 2500 Rand Tower, Minneapolis 2, Minn.
M & C NUCLEAR, INC., 40 Forest St., Attleboro, Mass. ADV. PG. 177
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
MALLORY-SHARON METALS CORP., Niles, Ohio ADV. PG. 5
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.
NUCLEAR MATERIALS & EQUIPMENT CORP., 600 Warren Ave., Apollo, Pa. ADV. PG. 163
Nuclear Metals, Inc., Concord, Mass.
Oregon Metallurgical Corp., P. O. Box 484, Albany, Ore.
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Rem-Cru Titanium, Inc., Midland, Pa.
St. Eloi Corp., Box 507, Newtown Station, Cincinnati 44, Ohio
Titanium Metals Corp. of America, 233 Broadway, New York 7, N. Y.
Vacuum Industrial Applications Ltd., Netherton Rd., Wishaw, Lankarshire, Scotland
Ver-Lac-Old Chemical Co., 116 Broad St., New York 4, N. Y.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

METERS

See also AMMETERS
CONTROLS
GAGES
INDICATORS
VOLTMETERS

METERS—Conductivity

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio ADV. PG. 230
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Hagan Chemical & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Industrial Instruments, Inc., 89 Commerce Rd., Cedar Grove, N. J.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.

Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86

METERS—Count-Rate

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Island City 6, N. Y. ADV. PG. 186
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio ADV. PG. 230
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
B-I-F Industries, Inc., 530-D Harris Ave., Providence 1, R. I.
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Bruel & Kjaer, Naerum, Denmark
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
Eberline Instrument Corp. P. O. Box 279, Santa Fe, N. M.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Ericssons Telephones Ltd., Instrument Div., High Church St., New Basford, Nottingham, England
Fairchild Camera Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston Ill. ADV. PG. 229
General Radiological, Ltd., 15—18 Clipstone St., London, W. 1, England
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
JOHNSON ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
Measurement Engineering Ltd., Arnprior, Ontario, Canada
MEILLON, INC., GEORGE T., 132 Nassau St., New York 38, N. Y. ADV. PG. 243
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
Nuclear Aids Corp., 612 N. Michigan Ave., Chicago, Ill.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 1, N. Y.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
NUCLEONIC LABS., INC., 5218 Park Heights Ave., Baltimore 15, Md. ADV. PG. 245
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
PHILIPS' GLOEILAMPENFABREKEN, N. V., Eindhoven, Holland ADV PG. 86
Potter Aeronautical Corp. Route 22, Union, N. J.
Precision Radiation Instruments, Inc., 5810 S. Normandie, Los Angeles 44, Calif.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St. Chicago 21, Ill. ADV. PG. 271
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TECHNCAL MEASUREMENT CORP., 411 Washington Ave. North Haven, Conn. ADV. PG. 51
TRACERLAB, INC., 1601 Trapelo Rd, Waltham 54, Mass ADV. PG. 151 152, 157
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Walkirt Co., The, 141 W. Hazel St. Inglewood 3 Calif.
Weston Instruments Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.

METERS—Electric

See AMMETERS: VOLTMETERS etc.

METERS—Flow, Gas

AEG—ABT KEA Hochhaus Sued Frankfurt/Main Germany
AERO RESEARCH INSTRUMENT CO. 315 N. Aberdeen St. Chicago 7 Ill. ADV. PG. 217
Air Reduction Sales Co. Div. of Air Reduction Co. Inc., 150 E. 42nd St., New York 17, N. Y.
American Gas Furnace Co. 130 Spring St. Elizabeth N. J.
ASSEMBLY PRODUCTS INC., Chesterland 6, Ohio ADV. PG. 230
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Barton Instrument Corp., 580 S. Monterey Pass Rd., Monterey Park, Calif.
B-I-F Industries Inc., 530-D Harris Ave., Providence 1, R. I.
Bristol Co., P. O. Box 1790, NBG, Waterbury 20, Conn.
Brooks Rotameter Co., Box 432, Lansdale, Pa.
Custom Lubricant Co., 743 Dwight Way, Berkeley 10, Calif.
Dynamic Instrument Co. Inc., 28 Carlton St., Cambridge, Mass.
Eclipse Fuel Engineering Co., 1100 Buchanan, Rockford, Ill.
Elliott Brothers (London) Century Works, Lewisham, London, S. E. 13, Engand
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Foster Engineering Co., 835 Lehigh Ave., Union, N. J.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Hays Corp., Michigan City 40, Ind.
Hill & Co., E. Vernon, P. O. Box 189, Lake Geneva, Wis.
HOKE, INC., Cresskill, N. J. ADV. PG. 222
Industrial Development Labs., Inc., 982 River Rd., Edgewater, N. J.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Mason-Neilan, Nahatan St., Norwood, Mass.
Measurement Engineering, Ltd., Arnprior, Ontario Canada
Meriam Instrument Co. The, 10920 Madison Ave., Cleveland 2, Ohio
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
National Instrument Labs., Inc., 828 Evarts St., N E Washington, D. C.
Neptune Meter Co., 19 W. 50th St., New York 20, N. Y.
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
Potter Aeronautical Corp., Route 22, Union, N. J.
Schutte & Koerting Co., Cornwells Heights, Bucks County, Pa.
Selas Corp. of America, Dresher, Pa.
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
Sunvic Controls Ltd., 10 Essex St., Strand, London W. C. 2 England
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Wallace & Tiernan, Inc., 25 Main St., Belleville 9, N. J.

METERS—Flow, Liquid

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Acoustica Associates, Inc., 26 Windsor Rd., Mineola, N. Y.
AERO RESEARCH INSTRUMENT CO., 315 N. Aberdeen St., Chicago 7, Ill. ADV. PG. 217
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio ADV. PG. 230
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Barton Instrument Corp., 580 S. Monterey Pass Rd., Monterey Park, Calif.
B-I-F Industries, Inc., 530—D Harris Ave., Providence 1, R. I.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Brooks Rotameter Co., Box 432, Lansdale, Pa.
Dynamic Instrument Co., Inc., 28 Carleton St., Cambridge Mass.
Eclipse Fuel Engineering Co., 1100 Buchanan, Rockford, Ill.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Fielden Electronics, Ltd., Paston Rd., Whytenshawe, Manchester, England
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Foster Engineering Co., 835 Lehgih Ave., Union, N. J.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Hays Corp., Michigan City 40, Ind
Hill & Co., E. Vernon, P. O. Box 189, Lake Geneva, Wis.
Industrial Development Labs. Inc., 982 River Rd., Edgewater, N. J.
LIBRASCOPE INC., 808 Western Ave., Glendale, Calif ADV. PG. 246
LIQUID METALS, INC., Box 26, Westford, Mass. ADV. PG. 233
McIntosh Equipment Corp., 17—19 Park Row, New York 38, N. Y.
M S A Research Corp., Callery, Pa.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Meriam Instrument Co., The, 10920 Madison Ave., Cleveland 2, Ohio
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Neptune Meter Co., 19 W. 50th St., New York 20, N. Y.
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
Nuclear Aids Corp., 612 N. Michigan Ave., Chicago, Ill.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 1, N. Y.
Potter Aeronautical Corp., Route 22 Union, N. J.
Revere Corp. of America, Wallingford, Conn.
Schutte & Koerting Co., Cornwell Heights, Bucks County, Pa.
Simplex Valve & Meter Co., 7 E. Orange St., Lancaster, Pa.
Smith Corp., A. O., 3533 N. 27th St., Milwaukee 1, Wis.
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
Worthington Corp., Harrison, N. J.

METERS—pH

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Advanced Instruments, Inc., 46—N Kenneth St., Newton Highlands 61, Mass.
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
Analytical Measurements, Inc., 585 Main St., Chatham, N. J.
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio ADV. PG. 230
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill.
Beckman/Scientific & Process Instruments Div., Beckman Instruments, Inc., 2500 Fullerton Rd., Fullerton, Calif.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
CAMBRIDGE INSTRUMENT CO., INC., 3109 Grand Central Terminal, New York 17, N. Y. ADV. PG. 237
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Fielden Electronics Ltd., Paston Rd., Whytenshawe, Manchester, England
Fisher Scientific Co., 709 Forbe St., Pittsburgh 19 Pa.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
LEEDS & NORTHRUP CO. 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
Macbeth Instrument Corp., Little Britain Rd., Newburgh, N. Y.
Measurement Engineering Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Nurnberg Thermometer Co., Inc., 124 Livingston St. Brooklyn 1, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Photovolt Corp., 95 Madison Ave., New York 16, N. Y.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
Polarad Electronics Corp., 43—20 34th St., Long Island City 1, N. Y.
Q. V. S., Inc., 20 N. 15th St., Orange, N. J.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Tenso-Lab Inc, South Buckout St., Irvington-on-Hudson, N. Y.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

METERS—Radiation Survey

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Island City 6, N. Y. ADV. PG. 186

ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio ADV. PG. 230
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
BALL BROTHERS RESEARCH CORP., Industrial Park, Boulder, Colo. ADV. PG. 74
Burndept Ltd., West St., Erith, Kent, U. K.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Eberline Instrument Corp., P. O. Box 279, Santa Fe, N. M.
Electronic Products Co., 111 E. Third St., Mt. Vernon, N. Y.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
ELOMAG SPRL, Avenue Wellington , Brussels, Belgium ADV. PG. 241
Ericssons Telephones, Ltd., Instrument Div., High Church St., New Basford, Nottingham, England
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
General Radiological Ltd., 15—18 Clipstone St., London, W. 1, England
International Pump & Machine Works, 81 Dorsa Ave., Livingston, N. J.
ISOTOPE DEVELOPMENTS, LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Jordan Electronics, A Div. of The Victoreen Instrument Co., 3025 W. Mission Rd., Alhambra, Calif.
Labgear Ltd., Nucleonics Div., Willow Place, Canada
Land Air, Inc., 2133 Adams Ave., San Leandro, Calif.
LANDSVERK ELECTROMETER CO., 41 Sonora Ave., Glendale 1, Calif. ADV. PG. 209
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
MEILLON, INC., GEORGE T., 132 Nassau St., New York 38, N. Y. ADV. PG. 243
Menlo Research Laboratory, P. O. Box 522, Menlo Park, Calif.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NATIONAL RADIAC, INC., 479 Washington St., Newark 2, N. J. ADV. PG. 233
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago 10, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 1, N. Y.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Nuclear Enterprises (G.B.) Ltd., Sighthill, Edinburgh, Scotland
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey) England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Pacific Transducer Corp., 11836 S W Pico Blvd., Los Angeles 64, Calif.
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
Phaostron Instrument & Electronic Co., 151 Pasadena Ave., South Pasadena, Calif.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Precision Radiation Instruments, Inc., 5810 S. Normandie, Los Angeles 44, Calif.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Specialty Engineering & Electronics Co., 79 Clifton Place, Brooklyn 38, N. Y.
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
UNIVERSAL ATOMICS, DIV. OF UNIVERSAL TRANSISTOR PRODUCTS CORP., 17 Brooklyn Ave., Westbury, N. Y. ADV. PG. 194
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203

METERS—Reactor Period

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AMERICAN TRADAIR CORP., SUB OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Island City 6, N. Y. ADV. PG. 186
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio ADV. PG. 230
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Radiological, Ltd., 15—18 Clipstone St., London, W. 1, England
HAMNER ELECTRONICS CO. Box 531, Princeton, N. J. ADV. PG. Second Cover
ISOTOPE DEVELOPMENTS, LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
KEITHLEY INSTRUMENTS, INC., 12115 Euclid Ave., Cleveland 6, Ohio ADV. PG. 104
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., 0721 Hanna St., Beltsville, Md.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV PG. 255
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203

METERS—Recording

See RECORDERS

MICA

Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Asheville-Schoonmaker Co., Inc., 900 Jefferson Ave., Newport News, Va.
Auburn Mfg. Co., 500 Stack St., Middletown, Conn.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Continental-Diamond Fibre Corp., Newark, Delaware
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Foote Mineral Co., 18 W. Chelten Ave., Philadelphia 44, Pa.
Micanite & Insulators Co., Ltd., The, Blackhorse Lane, Walthamstow, London, E. 17, England
Mycalex Corp. of America, Clifton Blvd., Clifton, N. J.
PERFECTION MICA CO., MAGNETIC SHIELD DIV., 1332 N. Elston Ave., Chicago 22, Ill. ADV. PG. 234
Sylvania Electric Products Inc. Parts Div., Warren, Pa.

MICROAMMETERS

See AMMETERS—Milli & Micro

MICROCHEMICAL EQUIPMENT

Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
Baird & Tatlock (London) Ltd., Freshwater Rd., Chadwell Heath, Essex, England
Clay-Adams Co., 141 E. 25th St., New York 10, N. Y.
Ercona Corp., Scientific Instrument Div., 16 W. 46th St., New York 36, N. Y.
Fisher Scinetific Co., 709 Forbes St., Pittsburgh 19, Pa.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. , England
Kontes Glass Co., Dept P-159, Vineland, N. J.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Millipore Filter Corp., Bedford, Mass.
Neutronics Research Co., 165 Lake St., Waltham, Mass.
Nuclear Science Associates, 55 Manor Dirve., Newark 6, N. J.
Research Specialties Co., 200 S. Garrard Blvd., Richmond, Calif.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Thomas Co., Arthur H., Vine St., at Third, Box 779, Philadelphia 5, Pa.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England

MICROSCOPES—Electron

BENDIX AVIATION CORP., CINCINNATI DIV., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Ercona Corp., Scientific Instrument Div., 16 W. 46th St., New York 36, N. Y.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. ADV. PG. 198, 199
Philips Electronics, Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Radio Corporation of America, Industrial Electronic Products Div., Camden 2, N. J.
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.

MICROSCOPES—Optical

Abbeon Supply Co., 179—15 Jamaica Ave., Jamaica 32, N. Y.
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
American Optical Co., Instrument Div., Box A, Buffalo 15, N. Y.
Bausch & Lomb Optical Co., 630 St. Paul St., Rochester 2, N. Y.
Buhl Optical Co., 1009 Beech Ave., Pittsburgh 33, Pa.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Eder Instrument Co., Inc., 2293 N. Clybourn Ave., Chicago 14, Ill.
Engis Equipment Co., 431 S. Dearborn St., Chicago, Ill.
Ercona Corp., Scientific Instrument Div., 16 W. 46th St., New York 36, N. Y.
Gaertner Scientific Corp., 1237 Wrightwood Ave., Chicago, Ill.
Hacker & Co., Inc., William J., 82 Beaver St., New York 5, N. Y.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Leitz, Inc., E. 468 Fourth Ave. New York, N. Y.
NEW ENGLAND SCIENTIFIC INSTRUMENT CO., 238 Main St., Cambridge 42, Mass. ADV. PG. 198, 199
Opplem Co., Inc., 83 Uhland St., East Rutherford, N. J.
Pacific Transducer Corp. 11836 SW Pico Blvd., Los Angeles 64, Calif.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Tinsley Laboratories, Inc., 2526 Grove St., Berkeley 4, Calif.
Unitron Instrument, A Div. of United Scientific Co., 204—206 Milk St., Boston 9, Mass.

MICROTOMES

American Optical Co., Instrument Div., Box A, Buffalo 15, N. Y.
Baird & Tatlock (London) Ltd., Freshwater Rd., Chadwell Heath, Essex, England
Bausch & Lomb Optical Co., 630 St. Paul St., Rochester 2, N. Y.
CAMBRIDGE INSTRUMENT CO., INC., 3109 Grand Central Terminal, New York 17, N. Y. ADV. PG. 237
Custom Scientific Instruments, Inc., P. O. Box 179, Kearny, N. J.
Hacker & Co., Inc., William J., 82 Beaver St., New York 5, N. Y.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
INSTRUMENTATION ASSOCIATES, 17 W. 60th St., New York 23, N. Y. ADV. PG. 229
Leitz, Inc., E., 468 Fourth Ave., New York N. Y.
Mico Instrument Co., 82 S. Trowbridge St., Cambridge 38, Mass.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Opplem Co., Inc., 83 Uhland St., East Rutherford, N. J.
Philips Electronics, Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.

MILLS—Ball

Abbe Engineering Co., 50 Church St., New York 7, N. Y.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Hommel Co., O., 209 Fourth Ave., Pittsburgh, Pa.
Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 1, Wis.
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
U. S. Stoneware Co., Akron 9, Ohio

MILLS—Grinding

Abbe Engineering Co., 50 Church St., New York 7, N. Y.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Hommel Co., O., 209 Fourth Ave., Pittsburgh, Pa.

L & S Machine Co., Inc., P. O. Box 317, R. D. 2, Latrobe, Pa
Miller & Son, Inc., Franklin, 36 Meadow St., East Orange 36, N. J.
Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 1, Wis.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
Pulverizing Machinery Co., 37 Chatham Rd., Summit, N. J.
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
Sturtevant Mill Co., Park & Clayton Sts., Boston 22, Mass.
Thomas Co., Arthur H., Vine St. at Third, Box 779, Philadelphia 5, Pa.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England
U. S. Stoneware Co., Akron 9, Ohio

MILLS—Powder Compacting

ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
LOMA MACHINE MFG. CO., INC., 114 E. 32nd St., New York, N. Y. ADV. PG. 235
Miller & Son, Inc., Franklin, 36 Meadow St., East Orange, N. J.
Stanat Mfg. Co., Inc., 511 Shames Drive, Westbury, N. Y.
STOKES CORP., F. J., 5500 Tabor Rd., Philadelphia 20, Pa. ADV. PG. 268

MILLS—Rolling

Abbe Engineering Co., 50 Church St., New York 7, N. Y.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa.
FENN MANUFACTURING CO., THE, 200 Fenn Rd., Newington, Conn. ADV. PG. 11
LOMA MACHINE MFG. CO., INC., 114 E. 32nd St., New York, N. Y. ADV. PG. 235
Precision Methods & Machine, Inc., Cumberland Drive, Waterbury, Conn.
Stanat Mfg. Co., Inc., 511 Shames Drive, Westbury, N. Y.
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England ADV. PG. 66
Waterbury Farrell Foundry & Machine Co., 453 Bank St., Waterbury 20, Conn.
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.

MODELS—Scale

Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Atkins & Merrill, South Sudbury, Mass.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Custom Scientific Instruments, Inc., P. O. Box 170, Kearny, N. J.
Land Air, Inc., 2133 Adams Ave., San Leandro, Calif.
Model Builders, Inc., 5300 W. 63rd St., Chicago 38, Ill.
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Trio Machine Works, Inc., 3045 N. 3rd St., Philadelphia 33, Pa.

MODERATORS—Organic

Monsanto Chemical Co., Organic Chemical Div., Lindbergh & Olive St., St. Louis, Mo.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

MONITORS—Air Particle, Radioactivity

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Airborne Instruments Labs., Div. of Cutler-Hammer, 160 Old Country Rd., Mineola, N. Y.
Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Island City 6, N. Y. ADV. PG. 186
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMIC RESEARCH LABORATORY, 1017 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Burndept Ltd., West St., Erith, Kent, U. K.
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Eberline Instrument Corp., P. O. Box 279, Santa Fe, N. M.
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Fleming Radio (Developments), Ltd., Stevenage, Herts, England, U. K.
GELMAN INSTRUMENT CO., Chelsea, Mich. ADV. PG. 239
General Radiological Ltd., 15—18 Clipstone St., London, W. 1, England
ISOTOPE DEVELOPMENTS, LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Jordan Electronics, A Div. of The Victoreen Instrument Co., 3025 W. Mission Rd., Alhambra, Calif.
Land Air, Inc., 2133 Adams Ave., San Leandro, Calif.
LEVINTHAL ELECTRONIC PRODUCTS, INC., Stanford Industrial Park, Palo Alto, Calif. ADV. PG. 225
Millipore Filter Corp., Bedford, Mass.
Nash & Thompson Ltd., Oakcroft Rd., Chessington, Surrey, England
Nems Clarke Co., Div. of Vitro Corp. of America, 919 Jessup-Blair Drive, Silver Spring, Md.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 1, N. Y.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey) England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas ADV. PG. 205
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

MONITORS—Area Radioactivity

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Island City 6, N. Y. ADV. PG. 186
ANTON ELECTRONIC LABS., INC., 126—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Avtron Mfg., Inc., 10409 Meech St., Cleveland, Ohio
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
BALL BROTHERS RESEARCH CORP., Industrial Park, Boulder, Colo. DV. PG. 74
Burndept Ltd., West St., Erith, Kent, U. K.
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
Eberline Instrument Corp., P. O. Box 279, Santa Fe, N. M.
Electronic Products Co., 111 E. Third St., Mt. Vernon, N. Y.
Elliott Brothers (London) Ltd., Century orks, ewisham, London, S. E. 13, England
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Fleming Radio (Developments), Ltd., Stevenage, Herts, England, U. K.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
General Radiological Ltd., 15—18 Clipstone St., London, W. 1, England
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
Instruments, Inc., 122 N. Madison, P. O. Box 556, Tulsa, Okla.
ISOTOPE DEVELOPMENTS LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
ISOTOPES SPECIALTIES CO. ,170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Jordan Electronics, A Div. of the Victoreen Instrument Co., 3025 W. Mission Rd., Alhambra, Calif.
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
Land Air, Inc., 2133 Adams Ave., San Leandro, Calif.
Measurement Engineering Ltd., Arnprior, Ontario, Canada
MEDICAL ENGINEERING CORP. 11 University Rd., Cambridge 38, Mass. ADV. PG. 257
MEILLON, INC., GEORGE T., 132 Nassau St., New York 38, N. Y. ADV. PG. 243
NRD Instrument Co., A Div. of Nuclear Corp. of America 9842 Manchester St., St. Louis 19, Mo.
NATIONAL RADIAC, INC., 479 Washington St., Newark 2, N. J. ADV. PG. 233
Nuclear Corp. of America, Inc., 400 Park Ave., New York 1, N. Y.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Nuclear Enterprises (G.B.) Ltd., Sighthill, Edinburgh, Scotland
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surrey), England
Nuclear Service Laboratory, P. O. Box 1885, Knoxville 1, Tenn.
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Ohmart Corp., 2236 Bogen St., P. O. Box 67, Sta. 8, Cincinnati 22, Ohio
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
RADIATION COUNTER LABS, INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RIGGS NUCLEONICS CORP., 717 N. Victory Blvd., Burbank, Calif. ADV. PG. 267
St. John X-Ray Laboratory, Califon, N. J.
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 14 Bd. de Charonne, Paris, France
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas ADV. PG. 205
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
UNIVERSAL ATOMICS, DIV. OF UNIVERSAL TRANSISTOR PRODUCTS CORP., 17 Brooklyn Ave., Westbury, N. Y. ADV. PG. 194
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30 Pa. ADV. PG. 7—10
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.

MONITORS—Clothing & Laundry, Radioactivity

ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Burndept Ltd., West St., Erith, Kent, U. K.
Eberline Instrument Corp. P. O. Box 279, Santa Fe, N. M.
E.M.I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
General Radiological Ltd., 15—18 Clipstone St., London, W. 1, England
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, ountain Laukes N. J. ADV. PG. 268
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151 152, 157

MONITORS—Hand & Foot, Radioactivity

ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
Barker & Williamson Inc., Canal & Beaver, Bristol, Pa.
Burndept Ltd., West St., Erith, Kent, U. K.
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
Eberline Instrument Corp., P. O. Box 279, Santa Fe, N. M.
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Mullard Equipment Ltd., Mullard House, Torrington Pl., London, W. C. 1, England

NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
RADATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
RIGGS NUCLEONICS CORP., 717 N. Victory Blvd., Burbank, Calif. ADV. PG. 267
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.

MONITORS—Radioactivity

See CHAMBERS, Ionization; COUNTERS, etc.

MONITORS—Scram

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
Avtron Mfg., Inc., 10409 Meech St., Cleveland, Ohio
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Edison Industries, Thomas A., Instrument Div., West Orange, N. J.
Fairchild Camera & Instrument Corp., Defense Product Div., Robbins Lane, Syosset, N. Y.
General Radiological Ltd., 15—18 Clipstone St., London, W. 1, England
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Minneapolis-Honeywell Regulator Co., 10721 Hanna St., Beltsville, Md.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

MONITORS—Sight, Mobile

ANTON ELECTRONIC LABS., INC., 1226—28 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157

MONITORS—Water, Radioactivity

ACF INDUSTRIES, INC., NUCLEAR PRODUCTS-ERCO DIV., 508 Kennedy St., N. W., Washington 11, D. C. ADV. PG. 43
AEG—ABT KEA Hochhaus Sued, Frankfurt/Main, Germany
Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Eberline Instrument Corp., P. O. Box 279, Santa Fe, N. M.
Electronic Products Co., 111 E. Third St., Mt. Vernon, N. Y.
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England. ADV. PG. 236
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Fleming Radio (Developments), Ltd., Stevenage, Herts, England, U. K.
GELMAN INSTRUMENT CO., Chelsea, Mich. ADV. PG. 239
General Radiological, Ltd., 15—18 Clipstone St., London, W. 1, England
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
ISOTOPE DEVELOPMENTS, LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
JOHNSON & ASSOCIATES INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Jordan Electronics, A Div. of The Victoreen Instrument Co., 3025 W. Mission Rd., Alhambra, Calif.
Millipore Filter Corp., Bedford, Mass.
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications, Ltd., Emelco House, Bell St., Reigate (Surrey), England
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
RIGGS NUCLEONICS CORP., 717 N. Victory Blvd., Burbank, Calif. ADV. PG. 267
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas ADV. PG. 205
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

MOTOR-GENERATOR SETS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Acoustica Associates, Inc., 26 Windsor Rd., Mineola, N. Y.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
Barker Sales Co., 339 S. Broad Ave., Ridgefield, N. J.
Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N. J.
Clifton Precision Products Co., Broadway & Marple Ave., Clifton Heights, Pa.
D & R Ltd., 402 E. Gutierrez St., Santa Barbara, Calif.
Elcor Div., The Scranton Corp., 4059 W. North Ave., Chicago 39, Ill.
Electric Machinery Mfg. Co., 800 Central Ave., Minneapolis 13, Minn.
Electric Products Co., 1725 Clarkstone Rd., Cleveland 12, Ohio
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Georator Corp., Manassas, Va.
GREAT LAKES ELECTRIC MFG. CO., 17 S. Desplaines St., Chicago , Ill. ADV. PG. 245
Kahlenberg Bros. Co., 12th & Monroe Sts., Two Rivers, Wis.
Leach Corp., 18435 Susana Rd., Compton, Calif.
Leland Electric Co., Div. of American Machine & Foundry Co., 1501 Webster St., Dayton 1, Ohio
Motoresearch Co., 1600 Junction Ave., Racine, Wis.
Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio
Sangame Electric Co., Electronics Div., Springfield, Ill.
Varo Mfg. Co., Inc., 2201 Walnut St., Garland, Texas
Worthington Corp., Harrison, N. J.

MOTORS—A-C

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
Air Marine Motors, Inc., 369 Bay View Ave., Amityville, N. Y.
Airborne Accessories Corp., 1414 Chestnut Ave., Hillside 5, N. J.
Alliance Mfg. Co., Lake Park Blvd., Alliance, Ohio
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill.
Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N. J.
Borg Equipment Div., The George W. Borg Corp., 120 S. Main St., Jamesville, Wis
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Clifton Precision Products Co., Broadway & Marple Ave., Clifton Heights, Pa.
Cramer Controls Corp., Box 13, Centerbrook, Conn.
Dale Products, Inc., Columbus, Neb.
Dayton Electric Mfg. Co., 126 S. Oakley Blvd., Chicago 12, Ill.
Eastern Air Devices, Inc., 385 Central Ave., Dover, N. H.
Elcor Div., The Scranton Corp., 4059 W. North Ave., Chicago 39, Ill.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Electric Indicator Co., Inc., Camp Ave., Stamford, Conn.
Electric Machinery Mfg. Co., 800 Central Ave., Minneapolis 13, Minn.
Electric Products Co., 1725 Clarkstone Rd., Cleveland 12, Ohio
Elliott Brothers (London) Ltd., Lewisham Century Works, London S. E. 13, England
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
Fasco Industries, Inc., Rochester 2, N. Y.
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co., Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Haydon Co., A. W., The, 232 N. Elm St., Waterbury, Conn.
Howard Industries, Inc., Divisions: Cyclohm Motor Corp., Electric Motor Corp., Racine, Wis.
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58, N. Y. ADV. PG. 227
Leland Electric Co., Div. of American Machine & Foundry Co., 1501 Webster St., Dayton 1, Ohio
LYNDON AIRCRAFT, 140 Clifford St., Newark, N. J. ADV. PG. 250
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Motoresearch Co., 1600 Junction Ave., Racine, Wis.
Oster Mfg. Co., John, Avionic Div., 1 Main St., Racine, Wis.
Redmond Co., Inc., Owosso, Mich.
Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio
Robbins & Myers, Inc., 1345 Lagonda Ave., Springfield, Ohio
Rotron Manufacturing Co., 7 Schoonmaker Lane, Woodstock, N. Y.
Servomechanisms, Inc., 12500 Aviation Blvd., Hawthorne, Calif.
Small Motors, Inc., 2076 Elston Ave., Chicago 14, Ill.
Smith Corp., A. O., 3533 N. 27th St., Milwaukee 1, Wis.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
United Pressed Products Co, 900 S. Desplaines St., Chicago 7, Ill.
Wagner Electric Co., 6400 Plymouth Ave., St. Louis 14, Mo.
Western Gear Corp., P. O. Box 182, Lynwood, Calif.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10
Worthington Corp., Harrison, N. J.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

MOTORS—D-C

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
Airborne Accessories Corp., 1414 Chestnut Ave., Hillside 5, N. J.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
Amglo Corp., 4333 Ravenswood Ave., Chicago 13, Ill.
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill.
Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N. J.
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Clifton Precision Products Co., Broadway & Marple Ave., Clifton Heights, Pa.
Cramer Controls Corp., Box 13, Centerbrook, Conn.
Elcor Div., The Scranton Corp., 4059 W. North Ave., Chicago 39, Ill.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Electric Indicator Co., Inc., Camp Ave., Stamford, Conn.
Electric Products Co., 1725 Clarkstone Rd., Cleveland 12, Ohio
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co., Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Haydon Co., A. W., The, 232 N. Elm St., Waterbury, Conn.
Hill & Co., E. Vernon, P. O. Box 189, Lake Geneva, Wis.
Howard Industries, Inc., Divisions: Cyclohm Motor Corp., Electric Motor Corp., Racine, Wis.
Leland Electric Co., Div. of American Machine & Foundry Co., 1501 Webster St., Dayton 1, Ohio
LYNDON AIRCRAFT, 140 Clifford St., Newark, N. J. ADV. PG. 250
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Oster Mfg., Co., John, Avionic Div., 1 Main St., Racine, Wis.

Redmond Co., Inc., Owosso, Mich.
Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio
Robbins & Myers, Inc., 1345 Lagonda Ave., Springfield, Ohio
Servo-Tek Products Co., 1086 Goffle Rd., Hawthorne, N. J.
Small Motors, Inc., 2076 Elston Ave., Chicago 14, Ill.
Smith Corp., A. O., 3533 N. 27th St., Milwaukee 1, Wis.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Western Gear Corp., P. O. Box 182, Lynwood, Calif.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10
Worthington Corp., Harrison, N. J.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

MOTORS—Hydraulic

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Denison Engineering Div., American Brake Shoe Co., 1160 Dublin Rd., Columbus 16, Ohio
Eastern Industries, Inc., 100 Skiff St., Hamden, Conn.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
Hydel, Inc., 99 First St., Cambridge 41, Mass.
Oilgear Co., The, 16th St. & Pierce, Milwaukee 1 Wis.
Thompson Products Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Vickers Inc., Div of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.

MOTORS—Servo

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Airborne Accessories Corp., 1414 Chestnut Ave., Hillside 5, N. J.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N. J.
Clifton Precision Products Co., Broadway & Maple Ave., Clifton Heights, Pa.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Daystrom Transicoil Corp., Worcester, Pa.
Eastern Air Devices, Inc., 385 Central Ave., Dover, N. H.
ECLIPSE-PIONEER DIV., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Edison Industries, Thomas A., Instrument Div., West Orange, N. J.
Electric Indicator Co., Inc., Camp Ave., Stamford, Conn.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
FORD INSTRUMENT CO., DIV. OF SPERRY-RAND CORP., 31—10 Thomson Ave., Long Island City, N. Y. ADV. PG. 183
G-M Laboratories Inc., 4336 N. Knox Ave., Chicago 41, Ill.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Helipot Div. of Beckman Instruments, Fullerton, Calif.
Hill & Co., E. Vernon, P. O. Box 189, Lake Geneva, Wis.
Howard Industries, Inc., Divisions: Cyclohm Motor Corp., Electric Motor Corp., Racine, Wis.
Kearfott Co., Inc., Engineering & Sales Div., 1378 Main Ave., Clifton, N. J.
Ketay Dept., Norden Div. of United Aircraft Corp., Jericho Turnpike, Commach, N. Y.
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Hinson Blvd., Minneapolis, Minn
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Muirhead & Co., Ltd., Beckenham, Kent, England
Oster Mfg. Co., John, Avionic Div., 1 Main St., Racine, Wis.
Robbins & Myers, Inc., 1345 Lagonda Ave., Springfield, Ohio
Servomechanisms, Inc., 12500 Aviation Blvd., Hawthorne, Calif.
Servo-Tek Products Co., 1086 Goffle Rd., Hawthorne, N. J.
Small Motors, Inc., 2076 Elston Ave., Chicago 14, Ill.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Vickers Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
Western Gear Corp., P. O. Box 182, Lynwood, Calif.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

MOUNTINGS—Shock & Antivibrational

Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
Barry Controls Inc., 752 Pleasant St., Watertown, Mass.
Hamilton Kent Mfg. Co., Kent, Ohio
Hanna Engineering Works, 1767 N. Elston Ave., Chicago 22, Ill.
Lord Mfg. Co., 1635 W. 12th St., Erie, Pa.
Menasco Mfg. Co., 805 S. San Fernando Blvd., Burbank, Calif.
Precision Methods & Machine, Inc., Cumberland Drive, Waterbury, Conn.
Remier Co., 2101 Bryant St., San Francisco 10, Calif.
Stillman Rubber Co., 5811 Marilyn Ave., Culver City, Calif.
Trio Machine Works, Inc., 3045 N. 3rd St., Philadelphia 33, Pa.
U. M. & F. Mfg. Co., 10929 Vanowen St., North Hollywood, Calif.

NEUTRON GENERATORS

See GENERATORS—NEUTRON

NEUTRON SOURCES

See SOURCES—Neutron

NUCLEAR FUEL ELEMENTS

See FUEL ELEMENTS

NUCLEAR HOT LABORATORIES

See HOT LABORATORIES—Nuclear

NUCLEAR MATERIAL ACCOUNTABILITY

See SERVICES

NUCLEAR POWER PLANTS

See POWER PLANTS—Nuclear

NUCLEAR REACTORS

See REACTORS

O-RINGS

Advanced Products Co., 59 Broadway, North Haven, Conn.
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Andrew Co., Otis, 231—233 W. Court St., Cincinnati 2, Ohio
Auburn Mfg. Co., The, 500 Stack St., Middletown, Conn.
Automatic & Precision Mfg. Co., 252 Hawthorne Ave., Yonkers 5, N. Y.
Bacon Industries, Inc., 192 Pleasant St., Watertown, Mass.
Chicago Gasket Co., 1271 W. North Ave., Chicago 22, Ill.
CRANE PACKING CO., 6400 Oakton St., Morton Grove, Ill. ADV. PG. 182
Emerson Plastics Corp., 1383 Seabury Ave., Bronx 61, N. Y.
Garlock Packing Co., The, Palmyra, N. Y.
Johns-Manville, 22 E. 40th St., New York 16, N. Y.
Roberts Toledo Rubber Co., 4143 Monroe St., Toledo 13, Ohio
Shamban & Co., W. S., 11617 W. Jefferson Blvd., Culver City, Calif.
Sparta Mfg. Co., Div. of U. S. Ceramic Tile Co., Dover, Ohio
Stillman Rubber Co., 5811 Marilyn Ave., Culver City, Calif.
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
U. S. Gasket Co., Plastics Div. of The Garlock Packing Co., 600 N. 10th St., Camden 1, N. J.
Vacuum Industrial Applications, Ltd., Netherton Rd., Wishaw, Lanarkshire, Scotland
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.

OHMMETERS

See also MEGOHMMETERS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Airmec Ltd., High Wycombe, Buckinghamshire, England
Allied Radio Corp., 100 N. Western Ave., Chicago 80, Ill.
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio ADV. PG. 230
Associated Research, Inc., 3777 W. Belmont, Chicago, Ill.
Barnes Development Co., 213 W. Baltimore Pike, Lansdowne, Pa.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Cubic Corp., 5575 Kearny Villa Rd., San Diego 11, Calif.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Dice Co., J. W., Englewood 41, N. J.
Dumont Labs., Inc., Allen B., 760 Bloomfield Ave., Clifton, N. J.
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Franklin Electronics, Inc., E. Fourth St., Bridgeport, Pa.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Greibach Instruments Corp., 315 North Ave., New Rochelle, N. Y.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
Hycon Electronics, Inc., P. O. Box D, Pasadena, Calif.
Industrial Instruments, Inc., 89 Commerce Rd., Cedar Grove, N. J.
MacLeod & Hanopol, Inc., 10 Roland St., Charlestown 29, Mass.
Martindale Electric Co., Box 617, Edgewater Branch, Cleveland 7, Ohio
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Meters, Inc., 5353 N. Keystone Ave., Indianapolis 20, Ind.
Nash & Thompson, Ltd., Oakcroft Rd., Chessington, Surrey, England
NEW ENGLAND SIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. ADV. PG. 198, 199
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
PHYSICS RESEARCH LABORATORIES, P. O. Box 555, Hempstead, N. Y. ADV. PG. 166
Precision Apparatus Co., Inc., 70—31 84th St., Glendale 27, N. Y.
Q. V. S., Inc., 20 N. 15th St., East Orange, N. J.
RADIO CORPORATION OF AMERICA, TUBE DIV., 415 S. Fifth St., Harrison, N. J. ADV. PG. 170
Shallcross Mfg. Co., Selma, N. C.
Simpson Electric Co., Div. of American Gage & Machine Co., 5208 W. Kinzie St., Chicago 44, Ill.
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
Sticht Co., Inc., Herman H., 27 Park Place, New York 7, N. Y.
Triplett Electrical Instrument Co., 286 Harmon Rd., Bluffton, Ohio
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 4, N. J.
Winslow Co., Inc., 705 Lehigh Ave., P. O. Box 394, Union, N. J.

OPTICAL INSTRUMENTS & PARTS

Abrams Instrument Corp., 600-620 E. Shiawassee St., Lansing, Mich.
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
American Optical Co., 28 Mechanic St., Southbridge, Mass.
American Optical Co., Instrument Div., Box A, Buffalo 15, N. Y.
Atlantic Research Corp., Electromechanical Div., Alexandria, Va.
Atomic Laboratories, Berkeley, Calif.
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
BALL BROTHERS RESEARCH CORP., Industrial Park, Boulder, Colo. ADV. PG. 74
Bausch & Lomb Optical Co., 630 St. Paul St., Rochester 2, N. Y.
Buhl Optical Co., 1009 Beech Ave., Pittsburgh 33, Pa.
Burke & James, Inc., 321 S. Wabash, Chicago, Ill.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Crystals S. A., Case Mont Blanc 281, Geneva, Switzerland
Eastman Kodak Co., 343 State St., Rochester 4, N. Y.
Eichner Instruments Co., L. C., 19 Sebago St., Clifton, N. J.
Engis Equipment Co., 431 S. Dearborn St., Chicago, Ill.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Ercona Corp., Scientific Instrument Div., 16 W. 46th St., New York 36, N. Y.
Fish-Schurman Corp., 75 Portman Rd., New Rochelle, N. Y.
Gaertner Scientific Corp., 1237 Wrightwood Ave., Chicago, Ill.
Graflex, Inc., 3800 Monroe Ave., Rochester, N. Y.
Hacker & Co., Inc., William J., 82 Beaver St. New York 5 N. Y.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Hayward Scientific Glass Corp., 217 N. Magnolia Ave., Whittier, Calif.
Hett Associates, Inc., 603 Grand Ave., Englewood, N. J.
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Industrial Instruments Div., Mandrel Industries, Inc., 5134 Glenmont, Houston, Texas
KOLLMORGEN OPTICAL CORP., 347 King St., Northampton, Mass. ADV. PG. 167
LaPine & Co., Arthur S., 6001 S. Knox Ave., Chicago 29, Ill.

Leitz, Inc., E. 468 Fourth Ave., New York, N. Y.
Lerma Engineering Corp., P. O. Box 168, Northampton, Mass.
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. ADV. PG. 198, 199
Pacific Transducer Corp., 11836 S. W. Pico Blvd., Los Angeles 64, Calif.
Perkin-Elmer Corp., Main Ave., Norwalk, Conn.
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
Pyrometer Instrument Co., Inc., Bergenfield, N. J.
Research Development Manufacture, Inc., 429 E. Colfom St., Philadelphia 44, Pa.
SINGLE CRYSTAL CORP. OF AMERICA, R. D. 1, Saxonburg Blvd., Saxonburg, Pa. ADV. PG. 246
Tinsley Laboratories, Inc., 2526 Grove St., Berkeley 4, Calif.
Trio Machine Works, Inc., 3045 N. 3rd St., Philadelphia 33, Pa.
Wallin Associates, 18760 Ventura Blvd., Suite 1, Tarzana, Calif.
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.
Zenith Optical Lab., 1940 Great Neck Rd., Copiague, N. Y.

OSCILLOGRAPHS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Allegany Instrument Co., Inc., Cumberland, Md.
Brush Instruments Div. of Clevite Corp., 3405 Perkins Ave., Cleveland 14, Ohio
Cascade Research Corp., 53 Victory Lane, Los Gatos, Calif.
Century Electronics & Instruments, Inc., P. O. Box 6216, Tulsa 10, Okla.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Cossor Instruments, Ltd., Cossor House, Highbury Grove, London, N5, England
Edin Co. A Div. of Epsco, Inc., 207 Main St., Worcester, Mass.
Electro Medical Lab. Inc., South Woodstock 6, Vt.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
Hathaway Instrument Div., Hamilton Watch Co., 5800 E. Jewell, Denver, Colo.
Heiland Div. of Minneapolis-Honeywell Regulator Co., 5200 E. Evans Ave., Denver 22, Colo.
Hughes Products, Airport Station, Los Angeles 45, Calif.
Industrial Instrument Div., Mandrel Industries, Inc., 5134 Glenmont, Houston, Texas
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Mullard Equipment Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. ADV. PG. 198, 199
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Photron Instrument Co., 6516 Detroit Ave., Cleveland 2, Ohio
Precision Apparatus Co., Inc., 70—31 84th St., Glendale 27, N. Y.
Rank Cintel Ltd., Worsley Bridge Rd., London, S. E. 26, England
Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
Stoelting Co., C. H., 424 N. Homan Ave., Chicago 24, Ill.
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas
Waterman Products Co., Inc., 2445—63 Emerald St., Philadelphia 25, Pa.

OSCILLOSCOPES

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc. 1234 Air Way, Glendale, Calif.
Airmec Ltd., High Wycombe, Buckinghamshire, England
Allied Radio Corp., 100 N. Western Ave., Chicago 80, Ill.
Baldwin-Lima-Hamilton Corp., Electronics & Instrumentation Div., 42 Fourth Ave., Waltham 54, Mass.
Beva Laboratory, 22 Parker Ave., P. O. Box 478, Trenton 3, N. J.
CAMBRIDGE INSTRUMENT CO., INC., 3107 Grand Central Terminal, New York 17, N. Y. ADV. PG. 237
Cossor Instruments, Ltd., Cossor House, Highbury Grove, London, N5, England
Daven Co., The, Route 10, Livingston, N. J.
Dumont Labs., Inc., Allen B., 760 Bloomfield Ave., Clifton, N. J.
E.M.I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
Edgerton, Germeshausen & Grier, Inc., 160 Brookline Ave., Boston 15, Mass.
Edin Co., A Div. of Epsco, Inc., 207 Main St., Worcester, Mass.
Electronic Tube Corp., 1200 E. Mermaid Lane, Philadelphia 18, Pa.
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Falk & Co., Ltd., M., Emefco House, Bell St., Reigate (Surrey), England
Fleming Radio (Developments), Ltd., Stevenage, Herts, England, U. K.
Furzehill Laboratories Ltd., 57, Clarendon Rd., Watford, Herts, England
Heath Co., Benton Harbor, Mich.
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
Hickok Electrical Instrument Co., The, 10514 Dupont Ave., Cleveland 8, Ohio
Hughes Products, Airport Station, Los Angeles 45, Calif.
Hycon Electronics, Inc., P. O. Bin D, Pasadena, Calif.
International Telephone & Telegraph Corp., Industrial Products Div., 250 Garibaldi Ave., Lodi, N. J.
Jackson Electrical Instrument Co., 16 S. Patterson Blvd., Dayton 1, Ohio
Laboratory for Electronics, Inc., 75 Pitts St., Boston 15, Mass.
Lavoie Laboratories, Inc., Matawan-Freehold Rd., Morganville, N. J.
Leland Instruments, Ltd., 22—23 Millbank, London, Westminster, S. W. 1, England
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.
Mullard Equipment Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey) England
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Precision Apparatus Co., Inc., 70—31 84th St., Glendale 27, N. Y.
Radio City Products Co., Inc., Centre & Glendale Sts., Easton, Pa.
RADIO CORPORATION OF AMERICA, TUBE DIV., 415 S. Fifth St., Harrison, N. J. ADV. PG. 170
Simpson Electric Co., Div. of American Gage & Machine Co., 5208 W. Kinzie St., Chicago 44, Ill.
Specialty Engineering & Electronics Co., 79 Clifton Place, Brooklyn 38, N. Y.
Technitrol Engineering Corp., Emerald St. & Allegheny Ave., Philadelphia 34, Pa.
Tektronix, Inc., P. O. Box 831, Portland 7, Ore.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Triplett Electrical Instrument Co., 286 Harmon Rd., Bluffton, Ohio
Waterman Products Co., Inc., 2245—63 Emerald St., Philadelphia 5, Pa.
Waters Manufacturing, Inc., Boston Post Rd., Wayland, Mass.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.

OVENS

See FURNACES

PACKING

Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Andrew Co., Otis, 231-233 W. Court St., Cincinnati 2, Ohio
Armstrong Cork Co., Lancaster, Pa.
Auburn Mfg. Co., 500 Stack St., Middletown, Conn.
Chicago Gasket Co., 1271 W. North Ave., Chicago 22, Ill.
CRANE PACKING CO., 6400 Oakton St., Morton Grove, Ill. ADV. PG. 182
Durametallic Corp., Factory St., Kalamazoo, Mich.
Emerson Plastics Corp., 1383 Seabury Ave., Bronx 61, N. Y.
Felt Products Mfg. Co., 7450 N. McCormick Blvd., Skokie, Ill.
Garlock Packing Co., The, Palmyra, N. Y.
Johns-Manville, 22 E. 40th St., New York 16, N. Y.
Penn Fibre & Specialty Co., 2020 E. Westmoreland St., Philadelphia 34, Pa.
Republic Rubber Div., Lee Rubber & Tire Corp., Youngstown, Ohio
Roberts Toledo Rubber Co., 4143 Monroe St., Toledo 13, Ohio
Sparta Mfg. Co., Div. of U. S. Ceramic Tile Co., Dover, Ohio
Specialty Engineering & Electronics Co., 79 Clifton Place, Brooklyn 38, N. Y.
Stillman Rubber Co., 5811 Marilyn Ave., Culver City, Calif.
U. S. Gasket Co., Plastics Div. of The Garlock Packing Co., 600 N. 10th St., Camden 1, N. J.

PACKINGS—Mechanical

See SEALS—Mechanical

PAINTS—Protective

See also COATINGS—Protective

Amercoat Corp., 4809 Firestone Blvd., South Gate, Calif.
American Durofilm Co., Inc., 2300 Washington St., Newton Lower Falls, Mass.
American Products Mfg. Co., Inc., 8127—33 Oleander St., New Orleans 18, La.
Arco Co., 7301 Bessemer Ave., Cleveland 27, Ohio
Biggs Co., Carl H., 2255 Barry Ave., West Los Angeles 64, Calif.
Carboline Co. 32 Hanley Industrial Court, St. Louis 17, Mo.
Corrosite Corp., 64 S. Sixth St., Brooklyn 11, N. Y.
Du Pont de Nemours & Co., Inc., E. I., Wilmington 98, Del.
Electro Chemical Engineering & Mfg. Co., 750 N. Broad St., Emmaus, Pa.
Emerson & Cuming, Inc., 869 Washington St., Canton, Mass.
Fioquil Products, Inc., Cobleskill, N. Y.
Glidden Co., 900 Union Commerce Bldg., Cleveland 14, Ohio
Houghton Laboratories, Inc., Houghton Ave., Olean, N. Y.
Industrial Plastic Fabricators, Endicott St., Norwood, Mass.
Inertol Co., Inc., 484—7 Frelinghuysen Ave., Newark 12, N. J.
Knight Co., Maurice A., 171 Kelly Ave., Akron, Ohio
Lithcote Corp., 5000 Lake St., Melrose Park, Ill.
Metal & Thermit Corp. Rahway, N. J.
Micro Circuits Co., New Buffalo, Mich.
National Lead Co., 111 Broadway, New York 6, N. Y.
Pennsalt Chemicals Corp., 3 Penn Center, Philadelphia 2, Pa.
Pittsburgh Coke & Chemical, Protective Coatings Div., Grant Bldg., Pittsburgh 19, Pa.
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
Preco Chemical Corp., 415 Lexington Ave., New York 17, N. Y.
Sauereisen Cements Co., Sauereisen Bldg., Pittsburgh 15, Pa.
Sonneborn Sons, Inc., L., 404 Fourth Ave., New York 16, N. Y.
Stonhard Co., Inc., 1306 Spring Garden St., Philadelphia 23, Pa.
U. S. Stoneware Co., Akron 9, Ohio
Varnitor Co., 416 N. Varney St., Burbank, Calif.
Vorac Co., 147 Meadow Rd., Rutherford, N. J.

PAPER—Absorbent

American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ATOMIC ACCESSORIES INC., 244—04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
Eaton-Dikeman Co., Mount Holly Springs, Pa.
Schleicher & Schuell Co., Carl, Keene 8, N. H.

PAPER—Recording

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Alfax Paper & Engineering Co., P. O. Box 125, Westboro, Mass.
ATOMIC ACCESSORIES INC., 244—04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Bruel & Kjaer, Naerum, Denmark
Century Electronics & Instruments, Inc., P. O. Box 6216, Tulsa 10, Okla.
Du Pont de Nemours & Co., Inc., E. I., Wilmington 98, Del.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
Hogan Laboratories, Inc., 155 Perry St., New York 14, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Schleicher & Schuell Co., Carl, Keene 8, N. H.

PERISCOPES

See also OPTICAL INSTRUMENTS & PARTS

AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
American Optical Co., Instrument Div., Box A, Buffalo 15, N. Y.
Bausch & Lomb Optical Co., 630 St. Paul St., Rochester 2, N. Y.
Buhl Optical Co., 1009 Beech Ave., Pittsburgh 33, Pa.
Chicago Aerial Industries, Inc., 1980 Hawthorne Ave., Melrose Park, Ill.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Gaertner Scientific Corp., 1237 Wrightwood Ave., Chicago, Ill.
KOLLMORGEN OPTICAL CORP., 347 King St., Northampton, Mass. ADV. PG. 167
Lerma Engineering Corp., P. O. Box 168, Northampton, Mass.
Tinsley Laboratories, Inc., 2526 Grove St., Berkeley 4, Calif.
Trio Machine Works, Inc., 3045 N. 3rd St., Philadelphia 33, Pa.

PHARMACEUTICALS—Radioactive

See also ISOTOPE-LABELED COMPOUNDS

Abbott Laboratories, Oak Ridge, Tenn.
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada ADV. PG. 155

ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Bio-Rad Laboratories, 1257 S. 32nd St., Richmond, Calif.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Volk Radiochemical Co., 5412 N. Clark St., Chicago 40, Ill.

PHOSPHORS—Scintillation

See SCINTILLATORS

PHOTOGRAPHIC FILM—for Dosimeters

Du Pont de Nemours & Co., Inc., E. I., Wilmington 98, Del.
Eastman Kodak Co., 343 State St., Rochester 4, N. Y.
LANDAUER, JR., & CO., R. S., 3920 216th St., Matteson, Ill. ADV. PG. 235
Minimax Co., 5905 N. Clark St., Chicago 26, Ill.
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
Nuclear Service Laboratory, P. O. Box 1885, Knoxville 1, Tenn.

PHOTOGRAPHIC MATERIALS—for Recording Instruments

Ansco Division, General Aniline & Film Corp., Binghamton, N. Y.
Burke & James, Inc., 321 S. Wabash, Chicago, Ill.
Century Electronics & Instruments, Inc., P. O. Box 6216, Tulsa 10, Okla.
Dumont Labs., Inc., Allen B., 760 Bloomfield Ave., Clifton, N. J.
Du Pont de Nemours & Co. Inc., E. I., Wilmington 98, Delaware
Eastman Kodak Co., 343 State St., Rochester 4, N. Y.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Heiland Div. of Minneapolis-Honeywell Regulator Co., 5200 E. Evans Ave., Denver 22, Colo.

PHOTOGRAPHIC PLATES & EMULSIONS—Nuclear

ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Eastman Kodak Co., 343 State St., Rochester 4, N. Y.

PHOTOMETERS—Flame

Advanced Instruments, Inc., 46-N Kenneth St., Newton Highlands 61, Mass.
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
American Electronic Laboratories, Inc., 121 N. 7th St., Philadelphia 6, Pa.
American Optical Co., Instrument Div., Box A, Buffalo 15, N. Y.
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Baldwin Instrument Co., Ltd., Brooklands Works Dartford, Kent, England
Beckman/Scientific & Process Instruments, Inc., 2500 Fullerton Rd., Fullerton, Calif.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Perkin-Elmer Corp., Main Ave., Norwalk, Conn.
Phoenix Precision Instrument Co., 3803—05 N. 5th St., Philadelphia, Pa.
Process & Instruments, 15 Stone Ave., Brooklyn 23, N. Y.

PHOTOMETERS—Light-Comparing

Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
ELDORADO ELECTRONICS CO., 2821 10th St., Berkeley, Calif. ADV. PG. 232
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Laboratory Equipment Corp., St. Joseph, Mich.
Macbeth Instrument Corp., Little Britain Rd., Newburgh, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Phoenix Precision Instrument Co., 3803—05 North 5th St., Philadelphia, Pa.
PHOTO RESEARCH CORP., 837 N. Cahuenga Blvd., Hollywood 38, Calif. ADV. PG. 156
Photovolt Corp., 95 Madison Ave., New York 16, N. Y.

PIPE

See TUBING

PIPE FITTINGS & ACCESSORIES

(Includes Hangers, etc.)

ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Alloy Flange & Fitting Corp., 222 Eagle St., Brooklyn, N. Y.
All-Stainless Inc., 40 Rugg Road, Allston 34, Mass.
Aluminum Co. of America, Alcoa Bldg., Pittsburgh 19, Pa.
American Cast Iron Pipe Co., Special Products Div., 2930 N. 16th St., Birmingham, Ala.
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
Babcock & Wilcox Co., Tubular Products Div., Beaver Falls, Pa.
BARNSTEAD STILL & STERILIZER CO., 84 Lanesville Terrace, Boston 31, Mass. ADV. PG. 227
Bergen Pipesupport Co., 50 Church St., New York, N. Y.
Chase Brass & Copper Co., Inc., 236 Grand St., Waterbury 20, Conn.
Consolidated Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
COOPER ALLOY CORP., Bloy St. & Ramsey Ave., Hillside 5, N. J. ADV. PG. 56
Corley Co., Inc., 103 E. Main St., Plainville, Conn.
CRANE CO., 836 Michigan Ave., Chicago 5, Ill ADV. PG 13
CRAWFORD FITTING CO., 884 E. 140th St., Cleveland 10, Ohio ADV. PG. 153
Crucible Steel Co. of America, Dept. N.B.G., Box 2518, Pittsburgh 30, Pa.
Dresser Mfg. Div., Dresser Industries, Inc., 41 Fisher Ave., Bradford, Pa.
Duriron Co., Inc., 450 N. Findlay St., Dayton 4, Ohio
ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave., Portland 10, Ore. ADV. PG. 175
Fairbanks Co., The, 393 Lafayette St., New York 3, N. Y.
Flori Pipe Co., 5700 Bulwer Ave., St. Louis, Mo.
Flexonics Corp., 1315 S. Third Ave., Maywood, Ill.
Flowline Corp., New Castle, Pa.
Grinnell Co., 260 W. Exchange St., Providence 1, R. I.
Haveg Industries, Inc., Halocarbon Div., 950 Greenbank Rd., Wilmington 8, Del.
Haynes Stellite Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York, N. Y.
Imperial Brass Mfg. Co., 6300 W. Howard St., Chicago 48, Ill.
Industrial Plastic Fabricators, Endicott St., Norwood, Mass.
INTERNATIONAL NICKEL CO., INC., 67 Wall St., New York 5, N. Y. ADV. PG. 114
Knapp Mills, Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
LADISH CO., 5458 S. Packard Ave., Cudahy, Wis. ADV. PG. 46, 47
Leavitt Machine Co., The, 10 E. River St., Orange, Mass.
Luzerne Rubber Co., Muirhead Ave., Trenton, N. J.
Marman Div., Aeroquip Corp. 11214 Exposition Blvd., Los Angeles 64, Calif.
Midwest Piping Co., Inc., 1450 S. 2nd St., St. Louis 3, Mo.
NATIONAL CARBON CO., DIV. OF UNION CARBIDE CORP., 30 E. 42nd St., New York 17, N. P. ADV. PG. Fourth Cover
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
Pittsburgh Piping & Equipment Co., 158 49th St., Pittsburgh, Pa.
Resistoflex Corp., Roseland, N. J.
Robinson Clay Products Co., The, 65 W. State St., Akron 9, Ohio
Special Screw Products Co., Bedford, Ohio
Speedline Stainless Steel Fittings Div. of Horace T. Potts Co., Erie Ave. & D St., Philadelphia 34, Pa.
Streed Products Corp., P. O. Box 447, Gadsden, Ala.
Swepco Tube Corp., 1 Clifton Blvd., Clifton, N. J.
T.I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England ADV. PG. 66
Taylor Forge & Pipe Works, Inc., 4735 W. 14th St., Chicago 90, Ill.
TUBE TURNS DIV. OF CHEMETRON CORP., 224 E. Broadway, Louisville 1, Ky. ADV. PG. 31
Tube Turns Plastics, Inc., An Affiliate of Chemetron Corp. 2929 Magazine St., Louisville 11, Ky.
U. S. PIPE & FOUNDRY CO., STEEL & TUBES DIV., Burlington, N. J. ADV. PG. 14, 15
U. S. Stoneware Co., Akron 9, Ohio
Vanton Pump & Equipment Corp., 201 Sweetland Ave., Hillside, N. J.
Voot Machine Co., Henry, 1000 W. Ormsby St., Louisville, Ky.
Walworth Co., 750 Third Ave., New York 17, N. Y.
Weatherhead Co., The, 128 W. Washington Blvd., Fort Wayne, Ind.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

PIPE JOINTS—Flexible

See also BELLOWS & EXPANSION UNITS

Aeroquip Corp., Jackson, Mich.
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
American Cast Iron Pipe Co., Special Products Div. 2930 N. 16th St., Birmingham, Ala.
Badger Mfg. Co., 230 Bent St., Cambridge 41, Mass.
Barco Mfg. Co., 500 N. Hough St., Barrington, Ill.
Croil-Reynolds Engineering Co., 17 John St., New York 38, N. Y.
Marman Div., Aeroquip Corp., 11214 Exposition Blvd., Los Angeles 64, Calif.
Moran Flexible Joint Co., Louisville, Ky.
NATIONAL CARBON CO., DIV. OF UNION CARBIDE CORP., 30 E. 42nd St., New York 17, N. Y. ADV. PG. Fourth Cover
Pittsburgh Piping & Equipment Co., 158 49th St., Pittsburgh, Pa.
Resistoflex Corp., Roseland, N. J.
Rotherm Engineering Co., Inc., 7280 W. Devon St., Chicago, Ill.
Spincraft, Inc., 4158H W. State St., Milwaukee 8, Wis.
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England ADV. PG. 66
U. S. Gasket Co., Plastics Div. of The Garlock Packing Co., 600 N. 10th St., Camden 1, N. J.
ZALLEA BROTHERS, 800 Locust St., Wilmington, Del. ADV. PG. 41

PIPETTES

ATOMIC ACCESSORIES INC., 244—04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
Baird & Tatlock (London) Ltd., Freshwater Rd., Chadwell Heath, Essex, England
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Clay-Adams, Inc., 141 E. 25th St., New York 10, N. Y.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
General Scientific Equipment Co. 7516 Limekiln Pike, Philadelphia 50, Pa.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Kontes Glass Co., Dept. P—159, Vineland, N. J.
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey) England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Tenso-Lab Inc. South Buckout St., Irvington-on-Hudson, N. Y.
Thomas Co., Arthur A., Vine St. at Third, Box 779, Philadelphia 5, Pa.
Towers & Co., Ltd. J. W., Victoria House Widnes, Lancs., England
Townson & Mercer, Ltd., Croydon, Surrey, England
Volk Radiochemical Co., 5412 N. Clark St., Chicago 40, Ill.
Will Corporation, Wilco Place, Box 1050, Rochester 3, N. Y.

PIPETTES—Automatic

American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
Gallenkamp & Co., Ltd., A., Sun St. London E. C. 2, England
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Kontes Glass Co., Dept. P-159, Vineland, N. J.
Laboratory Equipment Corp., St. Joseph, Mich.
Nash & Thompson, Ltd., Oakcroft Rd., Chessington, Surrey, England
Nuclear Science Associates, 55 Manor Drive, Newark 6, N. J.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Thomas Co., Arthur A., Vine St. at Third, Box 779 Philadelphia 5, Pa.
Towers & Co., Ltd., J. W., Victoria House Widnes, Lancs., England
Volk Radiochemical Co. 5412 N. Clark St., Chicago 40, Ill.
Will Corporation, Wilco Place, Box 1050, Rochester 3, N. Y.

PIPETTORS—Remote

ATOMIC ACCESSORIES INC., 244—04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.

INSTRUMENTATION ASSOCIATES, 17 W. 60th St., New York 23, N. Y. ADV. PG. 229
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
Nuclear Science Associates, 55 Manor Drive, Newark 6, N. J.
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Societe D'Applications Industrielles de la Physique (S. A. I. P.), 146, Bd. de Charonne, Paris, France
TRACERLAB, INC., 1601 Trapelo Rd. Waltham 55, Mass. ADV. PG. 151, 152, 157

PIPING

See TUBING

PLANCHETS

ATOMIC ACCESSORIES INC., 244—04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago 10, Ill. ADV. PG. 91
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey) England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Pacific Nuclear Co., 5439 Geary Blvd., San Francisco 21, Calif.
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
PLANCHETS, Box 216, Chelsea, Mich. ADV. PG. 247
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
Research Specialties Co., 200 S. Garrard Blvd., Richmond, Calif.
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England

PLANTS & FACILITIES—Nuclear

See POWER PLANTS—Nuclear

PLASTICS

Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
American Agile Corp., P. O. Box 168, Bedford, Ohio
American Durafilm Co., Inc., 2300 Washington St., Newton Lower Falls, Mass.
American Products Mfg. Co., Inc., 8127—33 Oleander St., New Orleans 18, La.
Anchor Plastics Co., Inc., 36—36 36th St., Long Island City 6, N. Y.
Andrew Co., Otis, 231—233 W. Court St., Cincinnati 2, Ohio
Auburn Mfg. Co., 500 Stack St., Middletown, Conn.
Bakelite Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
Biggs Co., Carl H., 2255 Barry Ave., West Los Angeles 64, Calif.
Chemical Development Corp., Endicott St., Danvers, Mass.
Chicago Gasket Co., 1271 W. North Ave., Chicago 22, Ill.
CONNEAUT RUBBER & PLASTIC CO., DIV. OF U. S. STONEWARE CO., Commerce St., Conneaut, Ohio ADV. PG. 97
Continental-Diamond Fibre Corp., Newark, Delaware
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Dow Chemical Co., Midland, Mich.
Dow Corning Corp., Midland, Mich.
Du Pont de Nemours & Co., Inc., E. I., Wilmington 98, Del.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Electro Technical Products Div. of Sun Chemical Corp., 113 E. Centre St., Nutley, N. J.
Emerson & Cuming, Inc., 869 Washington St., Canton, Mass.
Emerson Plastics Corp., 1383 Seabury Ave., Bronx 61, N. Y.
Garde Mfg. Co., 588 Eddy St., Providence 3, R. I.
Garlock Packing Co., The, Palmyra, N. Y.
General Electric Co., Laminated Products Dept., Coshocton, Ohio
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Goodrich Chemical Co., B. F., 3135 Euclid Ave., Cleveland 15, Ohio
Haveg Industries, Inc., Halocarbon Div., 950 Greenbank Rd., Wilmington 8, Del.
Hooker Chemical Corp., 13 Iroquois St., Niagara Falls, N. Y.
Houghton Laboratories, Inc., Houghton Ave., Olean, N. Y.
Industrial Plastic Fabricators, Endicott St., Norwood, Mass.
Keller Products, Inc., 41 Union St., Manchester, N. H.
Kendall Co., The, Polyken Sales Div., 309 W. Jackson Blvd., Chicago 6, Ill.
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Luzerne Rubber Co., Mulrhead Ave., Trenton, N. J.
McMillan Industrial Corp., Brownville Avenue Plant, Ipswich, Mass.
Mica Insulator Div. of Minnesota Mining & Mfg. Co., 797 Broadway, Schenectady 1, N. Y.
Micanite & Insulators Co., Ltd., The, Blackhorse Lane, Walthamstow, London, E. 17, England
Minnesota Mining & Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.
Minnesota Mining & Mfg. Co., Jersey City Chemical Div., 75 Droyers St., Jersey City 3, N. J.
Monsanto Chemical Co., Plastics Div., 600 Monsanto Ave., Springfield 2, Mass.
NATIONAL RADIAC, INC., 479 Washington St., Newark 2, N. J. ADV. PG. 233
National Vulcanized Fibre Co., Wilmington 99, Del.
Nopco Chemical Co., 60 Park Place, Newark 1, N. J.
NUCLEAR ENTERPRISES, LTD., 1750 Pembina Highway, Winnipeg, Canada ADV. PG. 270
Penn Fibre & Specialty Co., 2020 E. Westmoreland St., Philadelphia 34, Pa.
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
Polymer Corp., The, Reading, Pa.
RADIATION APPLICATIONS INC., 370 Lexington Ave., New York 17, N. Y. ADV. PG. 236
Reichhold Chemicals Inc., 525 N. Broadway, White Plains, N. Y.
Remler Co., 2101 Bryant St., San Francisco 10, Calif.
Resdel Corp., P. O. Box 217, Rio Grande, N. J.
Resistoflex Corp., Roseland, N. J.
Richardson Co., The, 2775 Lake St., Melrose Park, Ill.
Ryerson & Son, Inc., Joseph T., P. O. 8000-A, Chicago 80, Ill.
Shamban & Co., W. S., 11617 W. Jefferson Blvd., Culver City, Calif.
Shell Chemical Corp., Chemical Sales Div., 380 Madison Ave., New York, N. Y.
Sparta Mfg. Co., Div. of U. S. Ceramic Tile Co., Dover, Ohio
Spaulding Fibre Co., Inc., 310 Wheeler St., Tonawanda, N. Y.
Specialty Engineering & Electronics Co., 79 Clifton Place, Brooklyn 38, N. Y.
Sylvania Electric Products Inc., Parts Div., Warren, Pa.
Synthane Corp., River Rd., Oaks, Pa.
T.I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England ADV. PG. 66
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Thompson Fiber Glass Co., H. I., 1733 Cordova St., Los Angeles 7, Calif.
Trio Machine Works, Inc., 3045 N. 3rd St., Philadelphia 33, Pa.
U. S. Gasket Co., Plastics Div. of The Garlock Packing Co., 600 N. 10th St., Camden 1, N. J.
U. S. Stoneware Co., Akron 9, Ohio
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.
Yonkers Industrial Plastic Products Co., 137 Sawmill River Rd., Yonkers, N. Y.

PLASTICS—Irradiated

Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
CONNEAUT RUBBER & PLASTIC CO., DIV. OF U. S. STONEWARE CO., Commerce St., Conneaut, Ohio ADV. PG. 97
Electro Technical Products Div. of Sun Chemical Corp., 113 E. Centre St., Nutley, N. J.
Haveg Industries, Inc., Halocarbon Div., 950 Greenbank Rd., Wilmington 8, Del.
McMillan Industrial Corp., Brownville Avenue Plant, Ipswich, Mass.
Minnesota Mining & Mfg. Co. Jersey City Chemical Div., 75 Drovers St., Jersey City 3, N. J.
RADIATION APPLICATIONS INC., 370 Lexington Ave., New York 17, N. Y. ADV. PG. 238
Shamban & Co., W. S., 11617 W. Jefferson Blvd., Culver City, Calif.
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England ADV. PG. 66
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.

PLYWOOD—Shield-Metal-Clad

See also SHIELDING

Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
Andel & Co., Inc., 5218 N. Kedzie Ave., Chicago 25, Ill.
General Lead Construction Corp. 1800 Harrison Ave., Kearny, N. J.
Keller Products, Inc., 41 Union St., Manchester, N. H.
KELLEY & CO. O. G., 98 Taylor St., Dorchester, Mass. ADV. PG. 64, 65
Knapp Mills, Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
RAY-PROOF CORP., 843 Canal St., Stamford, Conn. ADV. PG. 272
Technical Ply-Woods, 6756 Crandon Ave., Chicago 49, Ill.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.

PNEUMATIC DISPATCH SYSTEMS

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Fielden Electronics, Ltd., Paston Rd., Whytenshawe, Manchester, England
Lamson Corp., Syracuse 1, N. Y.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio

PNEUMATIC MECHANISMS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Airmatic Systems Corp., 441 Market St., Saddle Brook, Rochelle Park, N. J.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
BENDIX AVIATION CORP., BENDIX-PACIFIC DIV., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Cooper Co., D. C., 1467 S. Michigan Ave., Chicago, Ill.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
DeVilbiss Co., 300 Phillips Ave., Toledo, Ohio
Eagle Signal Corp., 202 20th St., Moline, Ill.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
General Regulator Corp., 666 Fifth Ave., New York 19, N. Y.
Greer Hydraulics, Inc., International Airport, Jamaica 30, N. Y.
Hanna Engineering Works, 1767 N. Elston ave., Chicago 22, Ill.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
LYNDON AIRCRAFT, 140 Clifford St., Newark, N. J. ADV. PG. 250
Minneapolis-Honeywell Regulator Co. 2753 Fourth Ave., S., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
SOLAR AIRCRAFT CO., 2200 Pacific Highway, San Diego 12, Calif. ADV. PG. 143
Sunstrand-Turbo Div. of Sunstrand Machine tool, Pacoima, Calif.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Wagner Electric Co., 6400 Plymouth Ave., St. Louis 14, Mo.

POTENTIOMETERS & RHEOSTATS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Ace Electronics Associates, Inc., 99 Dover St., Somerville 44, Mass.
Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.
Allen-Bradley Co., 136 W. Greenfield Ave., Milwaukee 4, Wis.
Arnhold Ceramics, Inc., 1 E. 57th St., New York 22, N. Y.
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio ADV. PG. 230
Automatic & Precision Mfg. Co., 252 Hawthorne Ave., Yonkers 5, N. Y.
Borg Equipment Div., The George W. Borg Corp., 120 S. Main St., Janesville, Wis.
Bourns Laboratories, Inc., 6135 Magnolia Blvd., Riverside, Calif.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Chicago Aerial Industries, Inc., 1980 Hawthorne Ave., Melerose Park, Ill.
Cinema Engineering Co., Div. of Aerovox Corp., 1100 Chestnut St., Burbank, Calif.
Clarostat Mfg. Co., Inc., Dover, New Hampshire
Computer Instruments Corp., 92 Madison Ave., Hempstead, N. Y.
Continental Connector Corp., Div. of DeJur-Amsco Corp., Woodside 77, N. Y.
Cutler-Hammer, Inc., 412 N. 12th St., Milwaukee 1, Wis.
Daven Co., The, Route 10, Livingston, N. J.
Digitran Co., The, 45 W. Union St., Pasadena, Calif.
Electro Measurements Inc., 7524 S. W. Macadam Ave., Portland, Ore.
Fairchild Controls Corp., Components Div., 225 Park Ave., Hicksville, N. Y.
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.

Giannini & Co., Inc., G. M., 918 E. Green St., Pasadena, Calif.
Helipot Div. of Beckman Instruments, Fullerton, Calif.
K-F Development Co., 2606 Spring St., Redwood City, Calif.
Ketay Dept., Norden Div. of United Aircraft Corp., Jericho Turnpike, Commach, N. Y.
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Rubicon Instruments, Ridge Ave. at 35th St., Philadelphia 32, Pa.
Muirhead & Co., Ltd., Beckenham, Kent, England
Ohmite Mfg. Co., 3601 Howard St., Skokie, Ill.
Perkin-Elmer Corp., Main Ave., Norwalk, Conn.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Pollak Corp., Joseph, 81 Freeport St., Boston 22, Mass.
Reon Resistor Corp., 117 Stanley Ave., Yonkers, N. Y.
Servomechanisms, Inc., 12500 Aviation Blvd., Hawthorne, Calif.
Shallcross Mfg. Co., Selma, N. C.
Spectrol Electronics Corp., 1704 S. Del Mar Ave., San Gabriel, Calif.
Stackpole Carbon Co., St. Marys, Pa.
Technique Associates, 1413 Cornell Ave., Indianapolis, Ind.
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Ward Leonard Electric Co., 621 South St. Mt. Vernon, N. Y.
Waters Manufacturing, Inc., Boston Post Rd., Wayland, Mass.
Winslow Co., Inc., 705 Lehigh Ave., P. O. Box 394, Union, N. J.

POWER PLANTS—Nuclear

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
A. E. T.—John Thompson Nuclear Energy Co., Ltd., Radbroke Hall, Knutsford, Cheshire, England
AMF Atomics, a Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon Calif. ADV. PG. 169
ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
ALLIS-CHALMERS MFG., CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
Babcock & Wilcox Ltd., Babcock House, 209 Euston Rd., London N. W. 1, England
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa.
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Condenser Service & Engineering Co., Inc., 150 Observer Highway, Hoboken, N. J.
Consolidated Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Ebasco Services, Inc., 2 Rector St., New York 6, N. Y.
English Electric Export & Trading Co., Ltd., 2325 New York 4, N. Y.
Garde Mfg. Co., 588 Eddy St., Providence 9, R. I.
GENERAL ATOMIC DIV. OF GENERAL DYNAMICS CORP., P. O. Box 608, San Diego 12, Calif. ADV. PG. 89
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 1, N. Y. ADV. PG. 37-39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Leavitt Machine Co., 10 E. River St., Orange, Mass.
LOMA MACHINE MFG. CO., INC., 114 E. 32nd St., New York, N. Y. ADV. PG. 235
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
Nuclear Power Plant Co., Ltd., The, Booths Hall, Knutsford, Cheshire, England
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Perkin Engineering Corp., 345 Kansas St., El Segundo, Calif.
PIONEER SERVICE & ENGINEERING CO., 231 S. La Salle St., Chicago 4, Ill. ADV. PG. 80
Reactor Motors Div., Thiokol Chemical Corp., Denville, N. J.
Sargent & Lundy, 140 S. Dearborn St., Chicago 3, Ill.
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

POWER SUPPLIES—High Voltage (> 10 Kv)

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Amp, Incorporated, Harrisburg, Pa.
Amp, Incorporated, Chemicals & Dielectrics Div., 155 Park St., Elizabethtown, Pa.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
Arnold Magnetics Corp., 4613 W. Jefferson Blvd., Los Angeles 16, Calif.
Associated Research, Inc., 3777 W. Belmont, Chicago, Ill.
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67—70
Beta Electric Corp., a Div. of Sorensen Co., Inc., Richards Ave., South Norwalk, Conn.
Beva Laboratory, 22 Parker Ave., P. O. Box 478, Trenton 3, N. J.
Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N. J.
Bracke-Selb X-Ray Co., Inc., 16 Pelham Bay Park W., Pelham Manor, N. Y.
Central Transformer Co., 910 W. Jackson Blvd., Chicago 7, Ill.
Clegg Laboratories, Div. of Clegg, Inc., Ridgedale & Hanover Aves., Morristown, N. J.
COLE ELECTRIC CO., 8439 Stellar Drive, Culver City, Calif. ADV. PG. 193
Condenser Products Div. of New Haven Clock & Watch Co., 140 Hamilton St., New Haven, Conn.
COSMIC INSTRUMENTS, INC., 50 Broadway, New York 4, N. Y. ADV. PG. 251
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
DEL ELECTRONICS CORP., 521 Homestead Ave., Mount Vernon, N. Y. ADV. PG. 241
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
Electro Engineering Works, 401 Preda St., San Leandro, Calif.
Embassy Engineering Corp., 673 Elton Ave., New York 55, N. Y.
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Geisler Laboratories, P. O. Box 252, Menlo Park, Calif.
Gosiin Electric & Mfg. Co., 2921 W. Olive St., Burbank, Calif.
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58, N. Y. ADV. PG. 227
Lee Electric & Mfg. Co., 2806 Clearwater St., Los Angeles 39, Calif.
LEVINTHAL ELECTRONIC PRODUCTS, INC., Stanford Industrial Park, Palo Alto, Calif. ADV. PG. 225
Manson Laboratories, Inc., 375 Fairfield Ave., Stamford, Conn.
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
Moloney Electric Co., 5390 Bircher Blvd., St. Louis 20, Mo.
N. J. E. Corp., 345 Carnegie Ave., Kenilworth, N. J.
Neutronic Associates, 93—14 101st Ave., Ozone Park 16, N. Y.
Northeast Scientific Corp., 617 Concord Ave., Cambridge 38, Mass.
Nuclear Aids Corp., 612 N. Michigan Ave., Chicago, Ill.
NUCLEONIC LABS., INC., 5218 Park Heights Ave., Baltimore 15, Md. ADV. PG. 245
Oregon Electronic Mfg. Co., 2105 S.E. 6th St., Portland 14, Ore.
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Perkin Engineering Corp., 345 Kansas St., El Segundo, Calif.
Peschel Electronics, Inc., R. F. D. #1, Patterson, N. Y.
Plastic Capacitors, Inc., 2620 N. Clybourn Ave., Chicago 14, Ill.
Polarad Electronics Corp., 43—20 34th St., Long Island City 1, N. Y.
Rectron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
Scientific Engineering Laboratory, 1510 6th St., Berkeley, Calif.
Sorensen & Co., Inc., Richards Ave., South Norwalk Conn.
SPELLMAN HIGH VOLTAGE CO., 3029 Webster Ave., Bronx 67, N. Y. ADV. PG. 253
Standard Electronics Div. of Radio Engineering Labs., Inc., 29—01 Borden Ave., Long Island City 1, N. Y.
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Syntron Co., 355 Lexington Ave., Homer, Pa.
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Thordarson-Meissner Mfg. Div., Mount Carmel, Ill.
Tinsley Laboratories, Inc., 2526 Grove St., Berkeley 4, Calif.
Union Elect-Sonics Corp., 111 Penn St., Quincy 69, Mass.
UNIVERSAL ATOMICS DIV OF UNIVERSAL TRANSISTOR PRODUCTS CORP., 17 Brooklyn Ave., Westbury, N. Y. ADV. PG. 194
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Wave Particle Corp., P. O. Box 252, Menlo Park, Calif.

POWER SUPPLIES—High Voltage (1-10 Kv)

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Acme Electric Corp., 31 Water St., Cuba, N. Y.
Amp, Incorporated, Harrisburg, Pa.
Amp, Incorporated, Chemicals & Dielectrics Div., 155 Park St., Elizabethtown, Pa.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
Arnold Magnetics Corp., 4613 W. Jefferson Blvd., Los Angeles 16, Calif.
Associated Research, Inc., 3777 W. Belmont, Chicago, Ill.
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Beta Electric Corp., a Div. of Sorensen Co., Inc., Richards Ave., South Norwalk, Conn.
Beva Laboratory, 22 Parker Ave., P. O. Box 478, Trenton 3, N. J.
Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N. J.
Bracke-Selb X-Ray Co., Inc., 16 Pelham Bay Park W., Pelham Manor, N. Y.
Clegg Laboratories Div. of Clegg, Inc., Ridgedale & Hanover Aves., Morristown, N. J.
COLE ELECTRIC CO., 8439 Stellar Drive, Culver City, Calif. ADV. PG. 193
Condenser Products Div. of New Haven Clock & Watch Co., 140 Hamilton St., New Haven, Conn.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
DEL ELECTRONICS CORP., 521 Homestead Ave. Mount Vernon, N. Y. ADV. PG. 241
Deltron, Inc., 2905 N. Leithgow St., Philadelphia 23, Pa.
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
Electro Engineering Works, 401 Preda St., San Leandro, Calif.
Electromation Co., 1646 18th St., Santa Monica, Calif.
Electronic Measurements Co., Inc., Lewis St. & Maple Ave., Eatontown, N. J.
Embassy Engineering Corp., 673 Elton Ave., New York 55, N. Y.
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
Ericssons Telephones, Ltd., Instrument Div., High Church St., New Basford, Nottingham, England
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Fluke Mfg. Co., Inc., John, 1111 W. Nickerson St., Seattle 99, Wash.
Geisler Laboratories, P. O. Box 252, Menlo Park, Calif.
General Photo Products Co., Inc., 15 Summit Ave., Chatham, N. J.
Gosiin Electric & Mfg. Co., 2921 W. Olive St., Burbank, Calif.
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
Hett Associates, Inc., 603 Grand Ave., Englewood, N. J.
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58, N. Y. ADV. PG. 227
ISOTOPE DEVELOPMENTS, LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England AD. PG. 226
JOHNSTON LABORATORIES, INC., WILLIAM H. Lafayette, Ind., AD. PG. 254
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
KEPCO LABORATORIES, INC., 131—38 Sanford Ave., Flushing 55, N. Y. ADV. PG. 173
Kinney Mfg. Div., The New York Air Brake Co., 3529 Washington St., Boston 30, Mass.
Labgear Ltd. Nucleonics Div., Willow Place, Cambridge, England
Laboratory Equipment Corp., St. Joseph, Mich.
Leach Corp., 18435 Susana Rd., Compton, Calif.
Lee Electric & Mfg. Co., 2806 Clearwater St. Los Angeles 39, Calif.
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N. Y.
Manson Laboratories, Inc., 375 Fairfield Ave., Stamford, Conn.
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
Maxson Instruments, 47—37 Austell Place, Long Island City 1, N. Y.
Measurements Engineering, Ltd., Arnprior, Ontario, Canada
Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.
Moloney Electric Co., 5390 Bircher Blvd., St. Louis 20, Mo.
Motoresearch Co., 1600 Junction Ave., Racine, Wis.
N. J. E. Corp., 345 Carnegie Ave., Kenilworth, N. J.
NATIONAL RADIAC, INC., 479 Washington St., Newark 2, N. J. ADV. PG. 233

Neutronic Associates, 93—14 101st Ave., Ozone Park 16, N. Y.
Northeast Scientific Corp., 617 Concord Ave., Cambridge 38, Mass.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surrey) England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
NUCLEONIC LABS., INC., 5218 Park Heights Ave., Baltimore 15, Md. ADV. PG. 245
Oregon Electronic Mfg. Co., 2105 S.E. 6th St., Portland 14, Ore.
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Perkin Engineering Corp., 345 Kansas St., El Segundo, Calif.
Peschel Electronics Inc., R. F. D. #1 Patterson, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN N. V., Eindhoven, Holland. ADV. PG. 86
Plastic Capacitors, Inc., 2620 N. Clybourn Ave., Chicago 14, Ill.
Polarad Electronics Corp., 43820 34th St., Long Island City 1, N. Y.
Power Sources, Inc., Burlington, Mass.
RADIATION INSTRUMENT CO., P. O. Box 733, Silver Spring, Md. ADV. PG. 250
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Radio City Products Co., Inc., Centre & Glendale Sts., Easton, Pa.
Resitron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
Sorensen & Co., Inc., Richards Ave., South Norwalk, Conn.
Spectrol Electronics Corp., 1704 S. Del Mar Ave., San Gabriel, Calif.
SPELLMAN HIGH VOLTAGE CO., 3029 Webster Ave., Bronx 67, N. Y. ADV. PG. 253
Standard Electronics Div. of Radio Engineering Labs., Inc., 29—01 Borden Ave., Long Island City 1, N. Y.
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Syntron Co., 355 Lexington Ave., Homer City, Pa.
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Thordarson-Meissner Mfg. Div., Mount Carmel, Ill.
Tinsley Laboratories, Inc., 2526 Grove St., Berkeley 4, Calif.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Transonic, Inc., 808 16th St., Box 59, Bakersfield, Calif.
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
Union Elect-Sonics Corp., 111 Penn St., Quincy 69, Mass.
UNIVERSAL ATOMICS, DIV. OF UNIVERSAL TRANSISTOR PRODUCTS CORP., 17 Brooklyn Ave., Westbury, N. Y. ADV. PG. 194
Wave Particle Corp., P. O. Box 252, Menlo Park, Calif.

POWER SUPPLIES—High Voltage Regulated

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Island City 6, N. Y. ADV. PG. 186
Amp, Incorporated, Chemicals & Dielectrics Div., 155 Park St., Elizabethtown, Pa.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
Arnold Magnetics Corp., 4613 W. Jefferson Blvd., Los Angeles 16, Calif.
Associated Research, Inc., 3777 W. Belmont, Chicago, Ill.
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG 67-70
Beva Laboratory, 22 Parker Ave., P. O. Box 478, Trenton 3, N. J.
Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N. J.
Beta Electric Corp., a Div. of Sorensen Co., Inc., Richards Ave., South Norwalk, Conn.
Clegg Laboratories Div. of Clegg, Inc., Ridgedale & Hanover Aves., Morristown, N. J.
COLE ELECTRIC CO., 8439 Stellar Drive, Culver City, Calif. ADV. PG. 193
Condenser Products Div. of New Haven Clock & Watch Co., 140 Hamilton St., New Haven, Conn.
COSMIC INSTRUMENTS, INC., 50 Broadway, New York 4, N. Y. ADV. PG. 251
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
DEL ELECTRONICS CORP., 521 Homestead Ave., Mount Vernon, N. Y. ADV. PG. 241
Deltron, Inc., 2905 N. Leithgow St., Philadelphia 23, Pa.
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
Douglas Radio Labs., 176 Norfolk Ave., Boston 19, Mass.
Dressen-Barnes Corp., 250 N. Viendo Ave., Pasadena 8, Calif.
Dynatron Radio, Ltd., St. Peter's Rd., Furze Platt, Maidenhead, Berks, England
Elcor, Inc,. Box 354, McLean, Va.
Electromation Co., 1646 18th St., Santa Monica, Calif.
Electronic Measurements Co. Inc., Lewis St. & Maple Ave., Eatontown, N. J.
Embassy Engineering Corp., 673 Elton Ave., New York 55, N. Y.
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Fluke Mfg. Co., Inc., John, 1111 W. Nickerson St., Seattle 99, Wash.
Franklin Electronics, Inc., E. Fourth St., Bridgeport, Pa.
Geisler Laboratories, P. O. Box 252, Menlo Park, Calif.
General Photo Products, Inc., 15 Summit Ave., Chatham, N. J.
General Radiological Ltd., 15—18 Clipstone St., London, W. 1, England
Goslin Electric & Mfg. Co., 2921 W. Olive St., Burbank, Calif.
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
Heath Co., Benton Harbor, Mich.
Hett Associates, Inc., 603 Grand Ave., Englewood, N. J.
Instruments, Inc., 122 N. Madison, P. O. Box 556, Tulsa, Okla.
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58, N. Y. ADV. PG. 227
ISOTOPE DEVELOPMENTS, LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
KEPCO LABORATORIES, INC., 131—38 Stanford Ave., Flushing 55, N. Y. ADV. PG. 173
Kin Tel, 5725 Kearny Villa Rd., San Diego 11, Calif.
Kinney Mfg. Div., The New York Air Brake Co., 3529 Washington St., Boston 30, Mass.
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
Leach Corp., 18435 Susana Rd., Compton, Calif.
Lee Electric Mfg. Co., 2806 Clearwater St., Los Angeles 39, Calif.
Leland Instruments, Ltd., 22—23 Millbank, Westminster, London, S. W. 1, England
Magnavox Co., The, Fort Wayne, Ind.
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N. Y.
Manson Laboratories, Inc., 375 Fairfield Ave., Stamford, Conn.
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass. ADV. PG. 257
Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.
Moloney Electric Co., 5390 Bircher Blvd., St. Louis 20, Mo.
Motoresearch Co., 1600 Junction Ave., Racine, Wis.
N. J. E. Corp., 345 Carnegie Ave., Kenilworth, N. J.
NATIONAL RADIAC, INC., 479 Washington St., Newark 2, N. J. ADV. PG. 233
Neutronic Associates, 93-14 101st Ave., Ozone Park 16, N. Y.
North Hills Electric Co., Inc., 402 Sagamore Ave., Mineola, N. Y.
Northeast Scientific Corp., 617 Concord Ave., Cambridge 38, Mass.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surrey) England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
NUCLEONIC LABS., INC., 5218 Park Heights Ave., Baltimore 15, Md. ADV. PG. 245
Oregon Electronic Mfg. Co., 2105 S. E. 6th St., Portland 14, Ore.
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Peerless Instrument Co., Inc., 90—15 Corona Ave., Elmhurst 73, N. Y.
Perkin Engineering Corp., 345 Kansas St., El Segundo, Calif.
Peschel Electronics, Inc., R. F. D. 1, Patterson, N. Y.
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG 86
Phoenix Precision Instrument Co., 3803—05 N. Fifth St., Philadelphia, Pa.
Plastic Capacitors, Inc., 2620 N. Clybourn Ave., Chicago 14, Ill.
Power Sources Inc., Burlington, Mass.
RS Electronics Corp., 435 Portage Ave., Palo Alto, Calif.
RADIATION INSTRUMENT CO., P. O. Box 733, Silver Spring, Md. ADV. PG. 250
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Radio City Products Co., Inc., Centre & Glendale Sts., Easton, Pa.
Research Specialties Co., 200 S. Garrard Blvd., Richmond, Calif.
Resitron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
Shallcross Mfg. Co., Selma, N. C.
Societe D'Applications Industrielles de la Physique (S. A. I. P.), 146, Bd. de Charonne, Paris, France
Sola Electric Co., 4633 W. 16th St., Chicago 90, Ill.
Sorensen & Co., Inc., Richards Ave., South Norwalk, Conn.
Spectrol Electronics Corp., 1704 S. Del Mar Ave., San Gabriel, Calif.
Sperry Gyroscope Div. of Sperry-Rand Corp., Great Neck, N. Y.
Standard Electronics Div. of Radio Engineering Labs., Inc., 29—01 Borden Ave., Long Island City 1, N. Y.
SPELLMAN HIGH VOLTAGE CO., 3029 Webster Ave., Bronx 67, N. Y. ADV. PG. 253
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Syntron Co., 355 Lexington Ave., Homer, Pa.
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Thordarson-Meissner Mfg. Div., Mount Carmel, Ill.
Tinsley Laboratories, Inc., 2526 Grove St., Berkeley 4, Calif.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Transonic, Inc., 808 16th St., Box 59, Bakersfield, Calif.
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
Union Elect-Sonics Corp., 111 Penn St., Quincy 69, Mass.
UNIVERSAL ATOMICS, DIV. OF UNIVERSAL TRANSISTOR PRODUCTS CORP., 17 Brooklyn Ave., Westbury, N. Y. ADV. PG. 194
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Wave Particle Corp., P. O. Box 252, Menlo Park, Calif.
Western Gear Corp., P. O. Box 182, Lynwood, Calif.

POWER SUPPLIES—Low Voltage (0-1,000 volts)

AEG—ABT KEA, Hochhaus Sued, Franfurt/Main, Germany
Acme Electric Corp., 31 Water St., Cuba, N. Y.
Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.
Alden Electronics & Impulse Recording Equipment Co., Westboro, Mass.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
American Electronic Laboratories, Inc., 121 N. 7th St., Philadelphia 6, Pa.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
Amp, Incorporated, Chemicals & Dielectrics Div., 155 Park St., Elizabethtown, Pa.
Amplifier Corp. of America, 396 Broadway, New York 13, N. Y.
Arnold Magnetics Corp., 4613 W. Jefferson Blvd., Los Angeles 16, Calif.
Associated Engineering Corp., 65 Kent St., Brookline 46, Mass.
Associated Specialties Co., 1751 Main St., Orefield, Pa.
Atlantic Research Corp., Electromechanical Div., Alexandria, Va.
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Bogen Co., David, Dept. MHN, P. O. Box 500, Paramus, N. J.
Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N. J.
Canadian Applied Research, Ltd., 1500 O'Connor Drive, Toronto 16, Ontario, Canada
Christie Electric Corp., 3410 W. 67th St., Los Angeles 43, Calif.
Clegg Laboratories Div. of Clegg, Inc., Ridgedale & Hanover Aves., Morristown, N. J.
Communication Accessories Co., Lee's Summit, Mo.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
D & R Ltd., 402 E. Gutierrez St., Santa Barbara, Calif.
Daven Co., The, Route 10 Livingston, N. J.
DEL ELECTRONICS CORP., 521 Homestead Ave., Mount Vernon, N. Y. ADV. PG. 241

Deltron, Inc., 2905 N. Leithgow St., Philadelphia 33, Pa.
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
Douglas Radio Labs., 176 Norfolk Ave., Boston 19, Mass.
Dressen-Barnes Corp., 250 N. Vinedo Ave., Pasadena 8, Calif.
Edin Co., A Div. of Epsco, Inc., 207 Main St., Worcester, Mass.
Eicor Div., The Scranton Corp., 4059 W. North Ave., Chicago 39, Ill.
Eicor, Inc., Box 354, McLean, Va.
Electromation Co., 1646 18th St., Santa Monica, Calif.
Electronic Measurements Co., Inc., Lewis St. & Maple Ave., Eatontown, N. J.
Engineered Electronics Co., 506 E. First St., Santa Ana, Calif.
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
Ericssons Telephones, Ltd., Instrument Div., High Church St., New Basford, Nottingham, England
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Fluke Mfg. Co., Inc., John, 1111 W. Nickerson St., Seattle 99, Wash.
Geisler Laboratories, P. O. Box 252, Menlo Park, Calif.
General Nuclear Corp., 550 Fifth Ave., New York 26, N. Y.
General Photo Products Co., Inc., 15 Summit Ave., Chatham, N. J.
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
Georator Corp., Manassas, Va.
Goslin Electric & Mfg. Co., 2921 W. Olive St., Burbank, Calif.
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
HAMNER ELECTRONICS CO., Box 531, Princeton N. J. ADV. PG. Second Cover
Hett Associates, Inc., 603 Grand Ave., Englewood, N. J.
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
Industrial Instrument Div., Mandrel Industries, Inc., 5134 Glenmont, Houston, Texas
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58, N. Y. ADV. PG. 227
Jordan Electronics, A Div. of the Victoreen Instrument Co., 3025 W. Mission Rd., Alhambra, Calif.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Kin Tel, 55, N. Y. ADV. PG. 173
KEPCO LABORATORIES, INC., 131—38 Sanford Ave., Flushing 55, N. Y. ADV. PG. 173
Kinney Mfg. Div. The New York Air Brake Co., 3529 Washington St., Boston 30, Mass.
Krohn-Hite Corp., 580 Massachusetts Ave., Cambridge 39, Mass.
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
Laboratory Equipment Corp., St. Joseph, Mich.
Lambda Electronics Corp., 11—11 131st St., College Point 56, N. Y.
Leach Corp., 18435 Susana Rd., Compton, Calif.
Lee Electric & Mfg. Co., 2806 Clearwater St., Los Angeles 39, Calif.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
Leland Electric Co., Div. of American Machine & Foundry Co., 1501 Webster St., Dayton 1, Ohio
Leland Instruments, Ltd. 22—23 Millbank, London, Westminster, S. W. 1, England
Magnavox Co., The, Fort Wayne, Ind.
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N. Y.
Magnetic Research Corp., Stabolt Div., 200—202 Center St., El Segundo, Calif.
Mallory & Co., Inc., P. R., 58 S. Gray St., Indianapolis 6, Ind.
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
Maxson Instruments 47—37 Austell Place, Long Island City 1, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass. ADV. PG. 257
Mid-Century Instrumatic Corp., 611 Broadway, New York 12, N. Y.
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.
Minneapolis-Honeywell Regulator Co., 10721 Hanna St., Beltsville, Md.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Model Rectifier Corp., 1675 Utica Ave., Brooklyn 34, N. Y.
Moloney Electric Co., 5390 Bircher Blvd., St. Louis 20, Mo.
Motoresearch Co., 1600 Junction Ave., Racine, Wis.
Mullard Equipment Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
N. J. E. Corp., 345 Carnegie Ave., Kenilworth, N. J.
Neutronic Associates, 93—14 101st Ave., Ozone Park 16, N. Y.
New York Transformer Co., Inc., Third Ave., Alpha, N. J.
North Hills Electric Co., Inc., 402 Sagamore Ave., Mineola, N. Y.
Northeast Scientific Corp., 617 Concord Ave., Cambridge 38, Mass.
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
NUCLEONIC LABS., INC., 5218 Park Heights Ave., Baltimore 15, Md. ADV. PG. 245
Oregon Electronic Mfg. Co., 2105 S.E. 6th St., Portland 14, Ore.
PACKARD INSTRUMENT CO., INC., P. O. Box 428, La Grange, Ill. ADV. PG. 82
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Peerless Instrument Co., Inc., 90—15 Corona Ave., Elmhurst 73, N. Y.
Perkin Engineering Corp., 345 Kansas St., El Segundo, Calif.
Peschel Electronics, Inc., R. F. D. 1, Patterson, N. Y.
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Phoenix Precision Instrument Co., 3803—05 N. 5th St., Philadelphia, Pa.
Plastic Capacitors, Inc., 2620 N. Clybourn Ave., Chicago 14, Ill.
Power Designs, Inc., 89—25 130th St., Richmond Hill 18, N. Y.
Power Sources Inc., Burlington, Mass.
RS Electronics Corp., 435 Portage Ave., Palo Alto, Calif.
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Radio City Products Co., Inc., Centre & Glendale Sts., Easton, Pa.
Rank Cintel Ltd., Worsley Bridge Rd., London, S. E. 26, England
Ransom Research, P. O. Box 269, San Pedro, Calif.
Raypar, Inc., 7800 W. Addison St., Chicago 34, Ill.
RED BANK DIV., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Resltron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
Sanford Miller Co., 691 Bedford Ave., Brooklyn 6, N. Y.
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
Sola Electric Co., 4633 W. 16th St., Chicago 50, Ill.
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
Specialty Engineering & Electronics Co., 79 Clifton Place, Brooklyn 38, N. Y.
Spectrol Electronics Corp., 1704 S. Del Mar Ave., San Gabriel, Calif.
Standard Electronics Div. of Radio Engineering Labs., Inc., 29—01 Borden Ave., Long Island City 1, N. Y.
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Superior Electric Co., 83 Laurel St., Bristol, Conn.
Syntron Co., 355 Lexington Ave., Homer Ity, Pa.
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas
Thordarson-Meissner Mfg. Div., Mount Carmel, Ill.
Tinsley Laboratories, Inc., 2526 Grove St., Berkeley 4, Calif.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Transonic, Inc., 808 16th St., Box 59, Bakersfield, Calif.
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
Union Elect-Sonics Corp., 111 Penn St., Quincy 69, Mass.
UNIVERSAL ATOMICS, DIV. OF UNIVERSAL TRANSISTOR PRODUCTS CORP., 17 Brooklyn Ave., Westbury, N. Y. ADV. PG. 194
Varo Mfg. Co., Inc., 2201 Walnut St., Garland, Texas
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Wave Particle Corp., P. O. Box 252, Menlo Park, Calif.
Western Gear Corp., P. O. Box 182, Lynwood, Calif.
Wheeler Electronic Corp., Sub. of Sperry Rand Corp., 150 E. Aurora St., Waterbury 20, Conn.

POWER SUPPLIES—Nuclear

See BATTERIES

POWER SUPPLIES—Regulated Current

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Acme Electric Corp., 31 Water St., Cuba, N. Y.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
Amp, Incorporated, Chemicals & Dielectrics, Div., 155 Park St., Elizabethtown, Pa.
Amplifier Corp. of America, 396 Broadway, New York 13, N. Y.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
Arnold Magnetics Corp., 4613 W. Jefferson Blvd., Los Angeles 16, Calif.
Associated Engineering Corp., 65 Kent St., Brookline 46, Mass.
Associated Specialties Co., 1751 Main St., Orefield, Pa.
Atlas Engineering Co., 176 Blue Hill Ave., Roxbury, Mass.
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N. J.
Christie Electric Corp., 3410 W. 67th St., Los Angeles 43, Calif.
Clegg Laboratories Div. of Clegg, Inc., Ridgedale & Hanover Aves., Morristown, N. J.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 691 Central Ave., Carlstadt, N. J. ADV. PG. 220
D & R Ltd., 402 E. Gutierrez St., Santa Barbara, Calif.
Daven Co., The, Route 10, Livingston, N. J.
Deltron, Inc., 2905 N. Leithgow St., Philadelphia 33, Pa.
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
Dressen-Barnes Corp., 250 N. Vinedo Ave., Pasadena 8, Calif.
Edin Co., A Div. of Epsco, Inc., 207 Main St., Worcester, Mass.
Electronic Measurements Co., Inc., Lewis St. & Maple Ave., Eatontown, N. J.
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
Fairchild Camega & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Fluke Mfg. Co., Inc., John, 1111 W. Nickerson St., Seattle 99, Wash.
Geisler Laboratories, P. O. Box 252, Menlo Park, Calif.
General Nuclear Corp., 550 Fifth Ave., New York 26, N. Y.
Gow-Mac Instrument Co., 100 Kings Rd., Madison, N. J.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
Heath Co., Benton Harbor, Mich.
Hett Associates, Inc., 603 Grand Ave., Englewood, N. J.
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58, N. Y. ADV. PG. 227
Jordan Electronics, A Div. of the Victoreen Instrument Co., 3025 W. Mission Rd., Alhambra, Calif.
KEPCO LABORATORES, INC., 131—38 Sanford Ave., Flushing 55, N. Y. ADV. PG. 173
Kin Tel, 5725 Kearny Villa Rd., San Diego 11, Calif.
Kinney Mfg. Div., The New York Air Brake Co., 3529 Washington St., Boston 30, Mass.
Leach Corp., 18435 Susana Rd., Compton, Calif.
Lee Electric & Mfg. Co., 2806 Clearwater St., Los Angeles 39, Calif.
Leland Electric Co., Div. of American Machine & Foundry Co., 1501 Webster St., Dayton 1, Ohio
Leland Instruments, Ltd., 22—23 Millbank, London, Westminster, S. W. 1, England
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N. Y.
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Moloney Electric Co., 5390 Bircher Blvd., St. Louis 20, Mo.
N. J. E. Corp., 345 Carnegie Ave., Kenilworth, N. J.
Neutronics Laboratory, Tinley Park, Ill.
New York Transformer Co., Inc., Third Ave., Alpha, N. J.
Northeast Scientific Corp., 617 Concord Ave., Cambridge 38, Mass.
North Hills Electric Co., Inc., 402 Sagamore Ave., Mineola, N. Y.
Nuclear Enterprises (G.B.) Ltd., Sighthill, Edinburgh, Scotland
NUCLEONIC LABS., INC., 5218 Park Heights Ave., Baltimore 15, Md. ADV. PG. 245
Oregon Electronic Mfg. Co., 2105 S.E. 6th St., Portland 14, Ore.
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Perkin Engineering Corp., 345 Kansas St., El Segundo, Calif.
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
Phoenix Precision Instrument Co., 3803—05 N. 5th St., Philadelphia, Pa.
Power Designs, Inc., 89—25 130th St., Richmond Hill 18, N. Y.
Power Sources Inc., Burlington, Mass.
Radio City Products Co., Inc., Centre & Glendale Sts., Easton, Pa.
Ransom Research, P. O. Box 269, San Pedro, Calif.
Resltron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas

SPELLMAN HIGH VOLTAGE CO., 3029 Webster Ave., Bronx 67, N. Y. ADV. PG. 253
Standard Electronics Div. of Radio Engineering Labs., Inc., 29—01 Borden Ave., Long Island City 1, N. Y.
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Superior Electric Co., The, 83 Laurel St., Bristol, Conn.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Thordarson-Meissner Mfg. Div., Mount Carmel, Ill.
Tinsley Laboratories, Inc., 2526 Grove St., Berkeley 4, Calif.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Transonic, Inc., 808 16th St., Box 59, Bakersfield, Calif.
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
Union Elect-Sonics Corp., 111 Penn St., Quincy 69, Mass.
UNIVERSAL ATOMICS, DIV. OF UNIVERSAL TRANSISTOR PRODUCTS CORP., 17 Brooklyn Ave., Westbury, N. Y. ADV. PG. 194
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Wave Particle Corp., P. O. Box 252, Menlo Park, Calif.
Weltronic Co., 19500 W. Eight Mile Rd., Detroit 41, Mich.
Western Gear Corp., P. O. Box 182, Lynwood, Calif.

PREAMPLIFIERS

See also AMPLIFIERS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.
Airpax Products Co., Seminole Div., Fort Lauderdale, Fla.
Alden Electronic & Impulse Recording Equipment Co., Westboro, Mass.
Allied Radio Corp., 100 N. Western Ave., Chicago 80, Ill.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
Atlantic Research Corp., Electromechanical Div., Alexandria, Va.
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44 Calif. ADV. PG. 256
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Beva Laboratory, 22 Parker Ave., P. O. Box 478, Trenton 3, N. J.
Bruel & Kjaer, Naerum, Denmark
Cossor Instruments, Ltd., Cossor House, Highbury Grove, London, N5, England
Cubic Corp., 5575 Kearny Villa Rd., San Diego 11, Calif.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Daven Co., The, Route 10, Livingston, N. J.
Dumont Labs., Inc., Allen B., 760 Bloomfield Ave., Clifton, N. J.
Dynatron Radio, Ltd., St. Peter's Rd., Furze Platt, Maidenhead, Berks, England
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
Edin Co., A Div. of Epsco, Inc., 207 Main St., Worcester, Mass.
Elcor, Inc., Box 354, McLean, Va.
Electronic Communications, Inc., 1501 72nd St., N., St. Petersburg, Fla.
Electronic Tube Corp., 1200 E. Mermaid Lane, Philadelphia 18, Pa.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
Engineered Electronics Co., 506 E. First St., Santa Ana, Calif.
Ericssons Telephones, Ltd., Instrument Div., High Church St., New Basford, Nottingham, England
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Franklin Electronics, Inc., E. Fourth St., Bridgeport, Pa.
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park 111. ADV. PG. 254
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
Heath Co., Benton Harbor, Mich.
Hydel, Inc., 99 First St., Cambridge 41, Mass.
Industrial Instrument Div., Mandrel Industries, Inc., 5134 Glenmont, Houston, Texas
Instruments, Inc., 122 N. Madison, P. O. Box 556, Tulsa, Okla.
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58 N. Y. ADV. PG. 227
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
Kin Tel, 5725 Kearny Villa Rd., San Diego 11, Calif.
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N. Y.
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Maxson Instruments, 47-37 Austell Place, Long Island City 1, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass. ADV. PG. 257
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Minneapolis-Honeywell Regulator Co., 10721 Hanna St., Beltsville, Md.
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago 10, Ill. ADV. PG. 91
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Nuclear Enterprises (G. B.) Ltd., Sighthill, Edinburgh, Scotland
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey), England
PACKARD INSTRUMENT CO., INC., P. O. Box 428, La Grange, Ill. ADV. PG. 82
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
RS Electronics Corp., 435 Portage Ave., Palo Alto, Calif.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Radio City Products Co., Inc., Centre & Glendale Sts., Easton, Pa.
Rank Cintel Ltd., Worsley Bridge Rd., London, S. E. 26, England
Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Scott, Inc., H. H., 111 Powdermill Road, Maynard, Mass.
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
Tektronix, Inc., P. O. Box 831, Portland 7, Ore.
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.
Telectro Industries Corp., 35-16 37th St., Long Island City 1, N. Y.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Thordarson-Meissner Mfg. Div., Mount Carmel, Ill.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
VICTOREEN INSTRUMENT CO., 5800-11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Wheeler Electronic Corp., Sub. of Sperry Rand Corp., 150 E. Aurora St., Waterbury 20, Conn.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

PRESSES—Pelleting

Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Denison Engineering Div., American Brake Shoe Co., 1160 Dublin Rd., Columbus 16, Ohio
Nash & Thompson Ltd., Oakcroft Rd., Chessington, Surrey, England
STOKES CORP., F. J., 5500 Tabor Rd., Philadelphia 20, Pa. ADV. PG. 268

PULSERS

Abrams Instrument Corp., 600-620 E. Shiawassee St., Lansing, Mich.
Arenberg Ultrasonic Lab., Inc., 94 Green St., Jamaica Plain 30, Mass.
Dawe Instruments Ltd., 99—101 Uxbridge Rd., Ealing, London W. 5 England
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
Lapp Insulator Co., Inc., 40 Gilbert St., LeRoy, N. Y.
LEVINTHAL ELECTRONIC PRODUCTS, INC., Stanford Industrial Park, Palo Alto, Calif. ADV. PG. 225
Manson Laboratories, Inc., 375 Fairfield Ave., Stamford, Conn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT CO., P. O. Box 733, Silver Spring, Md. ADV. PG. 250
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Spencer-Kennedy Labs., Inc., 1320 Soldiers Field Rd., Boston 35, Mass.
Technitrol Engineering Corp., Emerald St. & Allegheny Ave., Philadelphia 34, Pa.
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
Wave Particle Corp., P. O. Box 252, Menlo Park, Calif.

PULVERIZERS

See MILLS and GRINDERS

PUMPS—Canned-Motor

ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
American Meter Co., Pump Div., 13500 Philmont Ave., Philadelphia 16, Pa.
BRYON JACKSON PUMPS, INC., SUB. OF BORG-WARNER CORP., P. O. Box 2017A, Terminal Annex, Los Angeles 54, Calif. ADV. PG. 87—90
Chempump Corp., 1300 E. Mermaid Lane, Philadelphia 18, Pa.
Corley Co., Inc., 103 E. Main St., Plainville, Conn.
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
General Electric Co., Medium AC Motor & Generator Dept., 1 River Rd., Schenectady 5, N. Y.
Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio
Sethco Mfg. Co., 2293 Babylon Turnpike, Merrick, N. Y.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10
WHEELER MFG. CO., C. H., 19th & Lehigh Sts., Philadelphia 32, Pa. ADV. PG. 244

PUMPS—Canned-Rotor

ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
American Meter Co., Pump Div., 13500 Philmont Ave., Philadelphia 16, Pa.
Buffalo Pumps Div. of Buffalo Forge Co., North Tonawanda, N. Y.
BYRON JACKSON PUMPS, INC., SUB. OF BORG-WARNER CORP., P. O. Box 2017A, Terminal Annex, Los Angeles 54, Calif. ADV. PG. 87—90
Chempump Corp., 1300 E. Mermaid Lane, Philadelphia 18, Pa.
Corley Co., Inc., 103 E. Main St., Plainville, Conn.
General Electric Co., Medium AC Motor & Generator Dept., 1 River Rd., Schenectady 5, N. Y.
Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio
Sethco Mfg. Co., 2284 Babylon Turnpike, Merrick, N. Y.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10
Worthington Corp., Harrison, N. J.

PUMPS—Controlled-Leakage

ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
American Meter Co., Pump Div., 13500 Philmont Ave., Philadelphia 16, Pa.
Aurora Pump Div., The New York Air Brake Co., 48 Loucks St., Aurora, Ill.
BYRON JACKSON PUMPS, INC., SUB. OF BORG-WARNER CORP., P. O. Box 2017A, Terminal Annex, Los Angeles 54, Calif. ADV. PG. 87—90
Corley Co., Inc., 103 E. Main St., Plainville, Conn.
Lapp Insulator Co., Inc., 40 Gilbert St., LeRoy, N. Y.
Lawrence Pumps, Inc., 371 Market St., Lawrence, Mass.
Pacific Pumps, Inc., 5715 Bickett St., Huntington Park, Calif.
PEERLESS PUMP DIV. OF FOOD MACHINERY & CHEMICAL CO., 301 West Ave., 26, Los Angeles 31, Calif. ADV. PG. 247
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Union Steam Pump Co., Battle Creek, Mich.
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.

PUMPS—Diaphragm

American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
American Meter Co., Pump Div., 13500 Philmont Ave., Philadelphia 16, Pa.
B-I-F Industries, Inc., 530-D Harris Ave., Providence 1, R. I.
DeVilbiss Co., 300 Phillips Ave., Toledo, Ohio
Dorr-Oliver, Inc., Barry Place, Stamford, Conn.
GELMAN INSTRUMENT CO., Chelsea, Mich. ADV. PG. 239

Hills McCanna Co., 4605 W. Touhy Ave., Chicago 46, Ill.
Lapp Insulator Co., Inc., 40 Gilbert St., LeRoy, N. Y.
Rockwell Co., W. S., 200 Eliot St., Fairfield, Conn.
Roy Co., Milton, 1300 E. Mermaid Lane, Philadelphia 18, Pa.
Shriver & Co., Inc., T., 864 Hamilton St., Harrison, N. J.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Wallace & Tiernan, Inc., 25 Main St. Belleville 9, N. J.

PUMPS— Electromagnetic

ALLIS-CHALMERS MFG. CO., 935 S. 70th St. Milwaukee 1, Wis. ADV. PG. 84, 85
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
General Electric Co., Medium AC Motor & Generator Dept., 1 River Rd., Schenectady 5, N. Y.
LIQUID METALS, INC., Box 266, Westford, Mass. ADV. PG. 233
M S A Research Corp., Callery, Pa.
Sethco Mfg. Co., 2293 Babylon Turnpike, Merrick, N. Y.

PUMPS—Gas-Filled

BYRON JACKSON PUMPS, INC., SUB. OF BORG-WARNER CORP., P. O. Box 2017A, Terminal Annex, Los Angeles 54, Calif. ADV. PG. 87—90
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10
WHEELER MFG. CO., C. H., 19th & Lehigh Sts., Philadelphia 32, Pa. ADV. PG. 244

PUMPS—Magnetic Coupling

Lawrence Pumps, Inc., 371 Market St., Lawrence, Mass.
Precision Methods & Machine, Inc., Cumberland Drive, Waterbury, Conn.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio

PUMPS—Metering

American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
American Meter Co., Pump Div., 13500 Philmont Ave., Philadelphia 16, Pa.
B-I-F Industries, Inc., 530-D Harris Ave., Providence 1, R. I.
Brooks Rotameter Co., Box 432, Lansdale, Pa.
Dorr-Oliver, Inc., Barry Place, Stamford, Conn.
Hills McCanna Co., 4605 W. Touhy Ave., Chicago 46, Ill.
Kruger Instruments, Harold, P. O. Box 164, San Gabriel, Calif.
Lapp Insulator Co., Inc., 40 Gilbert St., LeRoy, N. Y.
Philadelphia Pump Div. of American Meter Co., 13500 Philmont Ave., Philadelphia 16, Pa.
Roy Co., Milton, 1300 E. Mermaid Lane, Philadelphia 18, Pa.
Sigmamotor, Inc., 500 N. Main St., Middleport, N. Y.
Sunstrand-Turbo Div. of Sunstrand Machine Tool, Pacoima, Calif.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Vanton Pump & Equipment Corp., 201 Sweetland Ave., Hillside, N. J.
Viking Pump Co., Fourth & State St., Cedar Falls, Iowa
Wallace & Tiernan, Inc., 25 Main St., Belleville 9, N. J.
Warren Pumps, Inc., Warren, Mass.

PUMPS—Submersed Motor

Aurora Pump Div., The New York Air Brake Co., 48 Loucks St., Aurora, Ill.
BYRON JACKSON PUMPS, INC., SUB. OF BORG-WARNER CORP., P. O. Box 2017A, Terminal Annex, Los Angeles 54, Calif. ADV. PG. 87-90
Corley Co., Inc., 103 E. Main St., Plainville, Conn.
Eastern Industries, Inc., 100 Skiff St., Hamden, Conn.
General Electric Co., Medium AC Motor & Generator Dept., 1 River Rd., Schenectady 5, N. Y.
PEERLESS PUMP DIV. OF FOOD MACHINERY & CHEMICAL CO., 301 West Ave., 26, Los Angeles 31, Calif. ADV. PG. 247
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

PUMPS—Vacuum

Alexander Vacuum Research Inc., 285 Madison Ave., New York 17, N. Y.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
Associated Engineering & Mfg. Corp., Glen Ridge, N. J.
Aurora Pump Div., The New York Air Brake Co., 48 Loucks St., Aurora, Ill.
Beach-Russ Co., 50 Church St., New York 7, N. Y.
Central Scientific Co., 1700 Irving Park Rd., Chicago 13, Ill.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Chicago Pump Co., 624 Diversey Parkway, Chicago 14, Ill.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
Dorr-Oliver, Inc., Barry Place, Stamford, Conn.
Eisler Engineering Co., 760 S. 13th St., Newark 3, N. J.
Eitel-McCullough, Inc., 301 Industrial Way, San Carlos, Calif.
Gast Mfg. Corp., P. O. Box 117-N, Benton Harbor, Mich.
GELMAN INSTRUMENT CO., Chelsea, Mich. ADV. PG. 239
Heraeus GmbH, W. C., 12-14 Heraeusstr., Hanau, Germany
High Vacuum Equipment Corp., 2 Churchill Rd., Hingham, Mass.
Ingersoll-Rand Co., Phillipsburg, N. J.
International Pump & Machine Works, 81 Dorsa Ave., Livingston, N. J.
Joy Mfg. Co., Oliver Bldg., Pittsburgh 22, Pa.
Kinetics Corp., 2 Churchill Rd., Hingham, Mass.
Kinney Mfg. Div., The New York Air Brake Co., 3529 Washington St., Boston 30, Mass.
Kontes Glass Co., Dept. P-159, Vineland, N. J.
Litton Engineering Labs., P. O. Box 949, Grass Valley, Calif.
NRC EQUIPMENT CORP., A SUB. OF NATIONAL RESEARCH CORP., 88 Charlemont St., Newton Highlands 61, Mass. ADV. PG. 159
Nash Engineering Co., 450 Wilson Rd., South Norwalk, Conn.
National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Phillips-Drucker, Route 1, P. O. Box 507, Astoria, Ore.
Quincy Compressor Co., Quincy, Ill.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Research Vacuum Supply Co., 6712 N. Clark St., Chicago, Ill.
Resitron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
STOKES CORP., F. J., 5500 Tabor Rd., Philadelphia 20, Pa. ADV. PG. 268
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Union Steam Pump Co., Battle Creek, Mich.
Vacuum Industrial Applications, Ltd., Netherton Rd., Wishaw, Lanarkshire, Scotland
Varian Associates, 611 Hansen Way, Palo Alto, Calif.
Veeco Vacuum Corp., 86 Denton Ave., New Hyde Park, N. Y.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10
WHEELER MFG. CO., C. H., 19th & Lehigh Sts., Philadelphia 32, Pa. ADV. PG. 244

PURIFIERS—Water

See WATER CONDITIONERS

QUARTZ—Fused

Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
General Electric Co., Nela Park, Cleveland 12, Ohio
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Gordon Co., Claud S., 619 W. 30th St., Chicago 16, Ill.
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany
Kahl Scientific Instrument Corp., P. O. Box 1166, El Cajon, Calif.
Laboratory Equipment Corp., St. Joseph, Mich.
Phoenix Precision Instrument Co., 3803—05 N. Fifth St., Philadelphia, Pa.
Quartz Products Corp., 688 Somerse St., Plainfield, N. J.
Quartz & Silice, 8 rue d'Anjou, Paris, France
Thermal American Fused Quartz Co., Inc., 18—70 Salem St., Dover, N. J.

RADIOACTIVE WASTE DISPOSAL

See SERVICES

RADIOGRAPHIC EQUIPMENT— Gamma Ray

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada. ADV. PG. 155
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
BUDD CO., NUCLEAR SYSTEMS DIV., 2950 Roberts Ave., Philadelphia 32, Pa. ADV. PG. 187
Canadian Radium & Uranium Corp., 630 Fifth Ave., New York 20, N. Y.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Falk & Co., Ltd., M., Emefco House, Bell St., Reigate (Surrey), England
Gamma Industrie, 52, Rue de Dunkerque, Paris, France
General Radiological, Ltd., 15—18 Clipstone St., London, W. 1, England
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
Isotope Products Div., Canadian Curtiss-Wright, Ltd., Davis Rd., Oakville, Ontario, Canada
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
Knapp Mills, Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Nuclear Engineering Ltd., Woolwich Rd., London S. E. 7, England
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35
RADIUM CHEMICAL CO., 161 E. 42nd St., New York 17, N. Y. ADV. PG. 241
St. John X-Ray Laboratory, Califon, N. J.
Technical Operations, Inc., South Ave., Burlington, Mass.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Western Radiation Lab., 1107 W. 24th St., Los Angeles 7, Calif.

RADIOGRAPHIC EQUIPMENT— X-Ray

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Andel & Co., Inc., 5218 N. Kedzie Ave., Chicago 25, Ill.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
Atomic Laboratories, Berkeley, Calif.
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
Balteau Electric Corp., New & Meadow Sts., Stamford, Conn.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
General Radiological, Ltd., 15-18 Clipstone St., London, W. 1, England
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
HIGH VOLTAGE ENGINEERING CORP., S. Bedford St., Burlington, Mass. ADV. PG. 189
MEILLON, INC., GEORGE T., 132 Nassau St., New York 38, N. Y. ADV. PG. 243
Mullard Equipment Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Philips Electronics Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35
Radiation Dynamics Inc., Westbury Industrial Park, Westbury, N. Y.
Resitron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
St. John X-Ray Laboratory, Califon, N. J.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
X-Ray Department of General Electric Co., 4855 Electric Ave., Milwaukee 1, Wis.

RADIOISOTOPES

See ISOTOPES—Radioactive

RARE EARTHS

See METALS, ALLOYS & COMPOUNDS (Including RARE EARTHS).

REACTOR CONTROLS

See CONTROLS, GAGES, METERS

SPELLMAN HIGH VOLTAGE CO., 3029 Webster Ave., Bronx 67, N. Y. ADV. PG. 253
Standard Electronics Div. of Radio Engineering Labs., Inc., 29—01 Borden Ave., Long Island City 1, N. Y.
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Superior Electric Co., The, 83 Laurel St., Bristol, Conn.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Thordarson-Meissner Mfg. Div., Mount Carmel, Ill.
Tinsley Laboratories, Inc., 2526 Grove St., Berkeley 4, Calif.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Transonic, Inc., 808 16th St., Box 59, Bakersfield, Calif.
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
Union Elect-Sonics Corp., 111 Penn St., Quincy 69, Mass.
UNIVERSAL ATOMICS, DIV. OF UNIVERSAL TRANSISTOR PRODUCTS CORP., 17 Brooklyn Ave., Westbury, N. Y. ADV. PG. 194
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Wave Particle Corp., P. O. Box 252, Menlo Park, Calif.
Weltronic Co., 19500 W. Eight Mile Rd., Detroit 41, Mich.
Western Gear Corp., P. O. Box 182, Lynwood, Calif.

PREAMPLIFIERS

See also AMPLIFIERS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.
Airpax Products Co., Seminole Div., Fort Lauderdale, Fla.
Alden Electronic & Impulse Recording Equipment Co., Westboro, Mass.
Allied Radio Corp., 100 N. Western Ave., Chicago 80, Ill.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
Atlantic Research Corp., Electromechanical Div., Alexandria, Va.
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Beva Laboratory, 22 Parker Ave., P. O. Box 478, Trenton 3, N. J.
Bruel & Kjaer, Naerum, Denmark
Cossor Instruments, Ltd., Cossor House, Highbury Grove, London, N5, England
Cubic Corp., 5575 Kearny Villa Rd., San Diego 11, Calif.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Daven Co., The, Route 10, Livingston, N. J.
Dumont Labs., Inc., Allen B., 760 Bloomfield Ave., Clifton, N. J.
Dynatron Radio, Ltd., St. Peter's Rd., Furze Platt, Maidenhead, Berks, England
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
Edin Co., A Div. of Epsco, Inc., 207 Main St., Worcester, Mass.
Elcor, Inc., Box 354, McLean, Va.
Electronic Communications, Inc., 1501 72nd St., N., St. Petersburg, Fla.
Electronic Tube Corp., 1200 E. Mermaid Lane, Philadelphia 18, Pa.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
Engineered Electronics Co., 506 E. First St., Santa Ana, Calif.
Ericssons Telephones, Ltd., Instrument Div., High Church St., New Basford, Nottingham, England
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Franklin Electronics, Inc., E. Fourth St., Bridgeport, Pa.
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
Heath Co., Benton Harbor, Mich.
Hydel, Inc., 99 First St., Cambridge 41, Mass.
Industrial Instrument Div., Mandrel Industries, Inc., 5134 Glenmont, Houston, Texas
Instruments, Inc., 122 N. Madison, P. O. Box 556, Tulsa, Okla.
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58, N. Y. ADV. PG. 227
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
Kin Tel, 5725 Kearny Villa Rd., San Diego 11, Calif.
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N. Y.
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Maxson Instruments, 47-37 Austell Place, Long Island City 1, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass. ADV. PG. 257
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Minneapolis-Honeywell Regulator Co., 10721 Hanna St., Beltsville, Md.
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago 10, Ill. ADV. PG. 91
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Nuclear Enterprises (G. B.) Ltd., Sighthill, Edinburgh, Scotland
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey), England
PACKARD INSTRUMENT CO., INC., P. O. Box 428, La Grange, Ill. ADV. PG. 82
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
RS Electronics Corp., 435 Portage Ave., Palo Alto, Calif.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Radio City Products Co., Inc., Centre & Glendale Sts., Easton, Pa.
Rank Cintel Ltd., Worsley Bridge Rd., London, S. E. 26, England
Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Scott, Inc., H. H., 111 Powdermill Road, Maynard, Mass.
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
Tektronix, Inc., P. O. Box 831, Portland 7, Ore.
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.
Telectro Industries Corp., 35-16 37th St., Long Island City 1, N. Y.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Thordarson-Meissner Mfg. Div., Mount Carmel, Ill.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
VICTOREEN INSTRUMENT CO., 5806-11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Wheeler Electronic Corp., Sub. of Sperry Rand Corp., 150 E. Aurora St., Waterbury 20, Conn.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

PRESSES—Pelleting

Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Denison Engineering Div., American Brake Shoe Co., 1160 Dublin Rd., Columbus 16, Ohio
Nash & Thompson Ltd., Oakcroft Rd., Chessington, Surrey, England
STOKES CORP., F. J., 5500 Tabor Rd., Philadelphia 20, Pa. ADV. PG. 268

PULSERS

Abrams Instrument Corp., 600-620 E. Shiawassee St., Lansing, Mich.
Arenberg Ultrasonic Lab., Inc., 94 Green St., Jamaica Plain 30, Mass.
Dawe Instruments Ltd., 99—101 Uxbridge Rd., Ealing, London W. 5, England
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
Lapp Insulator Co., Inc., 40 Gilbert St., LeRoy, N. Y.
LEVINTHAL ELECTRONIC PRODUCTS, INC., Stanford Industrial Park, Palo Alto, Calif. ADV. PG. 225
Manson Laboratories, Inc., 375 Fairfield Ave., Stamford, Conn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT CO., P. O. Box 733, Silver Spring, Md. ADV. PG. 250
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Spencer-Kennedy Labs., Inc., 1320 Soldiers Field Rd., Boston 35, Mass.
Technitrol Engineering Corp., Emerald St. & Allegheny Ave., Philadelphia 34, Pa.
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
Wave Particle Corp., P. O. Box 252, Menlo Park, Calif.

PULVERIZERS

See MILLS and GRINDERS

PUMPS—Canned-Motor

ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
American Meter Co., Pump Div., 13500 Philmont Ave., Philadelphia 16, Pa.
BRYON JACKSON PUMPS, INC., SUB. OF BORG-WARNER CORP., P. O. Box 2017A, Terminal Annex, Los Angeles 54, Calif. ADV. PG. 87—90
Chempump Corp., 1300 E. Mermaid Lane, Philadelphia 18, Pa.
Corley Co., Inc., 103 E. Main St., Plainville, Conn.
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
General Electric Co., Medium AC Motor & Generator Dept., 1 River Rd., Schenectady 5, N. Y.
Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio
Sethco Mfg. Co., 2293 Babylon Turnpike, Merrick, N. Y.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10
WHEELER MFG. CO., C. H., 19th & Lehigh Sts., Philadelphia 32, Pa. ADV. PG. 244

PUMPS—Canned-Rotor

ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
American Meter Co., Pump Div., 13500 Philmont Ave., Philadelphia 16, Pa.
Buffalo Pumps Div. of Buffalo Forge Co., North Tonawanda, N. Y.
BYRON JACKSON PUMPS, INC., SUB. OF BORG-WARNER CORP., P. O. Box 2017A, Terminal Annex, Los Angeles 54, Calif. ADV. PG. 87—90
Chempump Corp., 1300 E. Mermaid Lane, Philadelphia 18, Pa.
Corley Co., Inc., 103 E. Main St., Plainville, Conn.
General Electric Co., Medium AC Motor & Generator Dept., 1 River Rd., Schenectady 5, N. Y.
Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio
Sethco Mfg. Co., 2284 Babylon Turnpike, Merrick, N. Y.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10
Worthington Corp., Harrison, N. J.

PUMPS—Controlled-Leakage

ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
American Meter Co., Pump Div., 13500 Philmont Ave., Philadelphia 16, Pa.
Aurora Pump Div., The New York Air Brake Co., 48 Loucks St., Aurora, Ill.
BYRON JACKSON PUMPS, INC., SUB. OF BORG-WARNER CORP., P. O. Box 2017A, Terminal Annex, Los Angeles 54, Calif. ADV. PG. 87—90
Corley Co., Inc., 103 E. Main St., Plainville, Conn.
Lapp Insulator Co., Inc., 40 Gilbert St., LeRoy, N. Y.
Lawrence Pumps, Inc., 371 Market St., Lawrence, Mass.
Pacific Pumps, Inc., 5715 Bickett St., Huntington Park, Calif.
PEERLESS PUMP DIV. OF FOOD MACHINERY & CHEMICAL CO., 301 West Ave., 26, Los Angeles 31, Calif. ADV. PG. 247
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Union Steam Pump Co., Battle Creek, Mich.
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.

PUMPS—Diaphragm

American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
American Meter Co., Pump Div., 13500 Philmont Ave., Philadelphia 16, Pa.
B-I-F Industries, Inc., 530-D Harris Ave., Providence 1, R. I.
DeVilbiss Co., 300 Phillips Ave., Toledo, Ohio
Dorr-Oliver, Inc., Barry Place, Stamford, Conn.
GELMAN INSTRUMENT CO., Chelsea, Mich. ADV. PG. 239

Hills McCanna Co., 4605 W. Touhy Ave., Chicago 46, Ill.
Lapp Insulator Co., Inc., 40 Gilbert St., LeRoy, N. Y.
Rockwell Co., W. S., 200 Eliot St., Fairfield, Conn.
Roy Co., Milton, 1300 E. Mermaid Lane, Philadelphia 18, Pa.
Shriver & Co., Inc., T., 864 Hamilton St., Harrison, N. J.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Wallace & Tiernan, Inc., 25 Main St. Belleville 9, N. J.

PUMPS— Electromagnetic

ALLIS-CHALMERS MFG. CO., 935 S. 70th St. Milwaukee 1, Wis. ADV. PG. 84, 85
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
General Electric Co., Medium AC Motor & Generator Dept., 1 River Rd., Schenectady 5, N. Y.
LIQUID METALS, INC., Box 266, Westford, Mass. ADV. PG. 233
M S A Research Corp., Callery, Pa.
Sethco Mfg. Co., 2293 Babylon Turnpike, Merrick, N. Y.

PUMPS—Gas-Filled

BYRON JACKSON PUMPS, INC., SUB. OF BORG-WARNER CORP., P. O. Box 2017A, Terminal Annex, Los Angeles 54, Calif. ADV. PG. 87—90
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10
WHEELER MFG. CO., C. H., 19th & Lehigh Sts., Philadelphia 32, Pa. ADV. PG. 244

PUMPS—Magnetic Coupling

Lawrence Pumps, Inc., 371 Market St., Lawrence, Mass.
Precision Methods & Machine, Inc., Cumberland Drive, Waterbury, Conn.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio

PUMPS—Metering

American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
American Meter Co., Pump Div., 13500 Philmont Ave., Philadelphia 16, Pa.
B-I-F Industries, Inc., 530-D Harris Ave., Providence 1, R. I.
Brooks Rotameter Co., Box 432, Lansdale, Pa.
Dorr-Oliver, Inc., Barry Place, Stamford, Conn.
Hills McCanna Co., 4605 W. Touhy Ave., Chicago 46, Ill.
Kruger Instruments, Harold, P. O. Box 164, San Gabriel, Calif.
Lapp Insulator Co., Inc., 40 Gilbert St., LeRoy, N. Y.
Philadelphia Pump Div. of American Meter Co., 13500 Philmont Ave., Philadelphia 16, Pa.
Roy Co., Milton, 1300 E. Mermaid Lane, Philadelphia 18, Pa.
Sigmamotor, Inc., 500 N. Main St., Middleport, N. Y.
Sunstrand-Turbo Div. of Sunstrand Machine Tool, Pacoima, Calif.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Vanton Pump & Equipment Corp., 201 Sweetland Ave., Hillside, N. J.
Viking Pump Co., Fourth & State St., Cedar Falls, Iowa
Wallace & Tiernan, Inc., 25 Main St., Belleville 9, N. J.
Warren Pumps, Inc., Warren, Mass.

PUMPS—Submersed Motor

Aurora Pump Div., The New York Air Brake Co., 48 Loucks St., Aurora, Ill.
BYRON JACKSON PUMPS, INC., SUB. OF BORG-WARNER CORP., P. O. Box 2017A, Terminal Annex, Los Angeles 54, Calif. ADV. PG. 87-90
Corley Co., Inc., 103 E. Main St., Plainville, Conn.
Eastern Industries, Inc., 100 Skiff St., Hamden, Conn.
General Electric Co., Medium AC Motor & Generator Dept., 1 River Rd., Schenectady 5, N. Y.
PEERLESS PUMP DIV. OF FOOD MACHINERY & CHEMICAL CO., 301 West Ave., 26, Los Angeles 31, Calif. ADV. PG. 247
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

PUMPS—Vacuum

Alexander Vacuum Research Inc., 285 Madison Ave., New York 17, N. Y.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
Associated Engineering & Mfg. Corp., Glen Ridge, N. J.
Aurora Pump Div., The New York Air Brake Co., 48 Loucks St., Aurora, Ill.
Beach-Russ Co., 50 Church St., New York 7, N. Y.
Central Scientific Co., 1700 Irving Park Rd., Chicago 13, Ill.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Chicago Pump Co., 624 Diversey Parkway, Chicago 14, Ill.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
Dorr-Oliver, Inc., Barry Place, Stamford, Conn.
Eisler Engineering Co., 760 S. 13th St., Newark 3, N. J.
Eitel-McCullough, Inc., 301 Industrial Way, San Carlos, Calif.
Gast Mfg. Corp., P. O. Box 117-N, Benton Harbor, Mich.
GELMAN INSTRUMENT CO., Chelsea, Mich. ADV. PG. 239
Heraeus GmbH, W. C., 12-14 Heraeusstr., Hanau, Germany
High Vacuum Equipment Corp., 2 Churchill Rd., Hingham, Mass.
Ingersoll-Rand Co., Phillipsburg, N. J.
International Pump & Machine Works, 81 Dorsa Ave., Livingston, N. J.
Joy Mfg. Co., Oliver Bldg., Pittsburgh 22, Pa.
Kinetics Corp., 2 Churchill Rd., Hingham, Mass.
Kinney Mfg. Div., The New York Air Brake Co., 3529 Washington St., Boston 30, Mass.
Kontes Glass Co., Dept. P-159, Vineland, N. J.
Litton Engineering Labs., P. O. Box 949, Grass Valley, Calif.
NRC EQUIPMENT CORP., A SUB. OF NATIONAL RESEARCH CORP., 88 Charlemont St., Newton Highlands 61, Mass. ADV. PG. 159
Nash Engineering Co., 450 Wilson Rd., South Norwalk, Conn.
National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Phillips-Drucker, Route 1, P. O. Box 507, Astoria, Ore.
Quincy Compressor Co., Quincy, Ill.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Research Vacuum Supply Co., 6712 N. Clark St., Chicago, Ill.
Resitron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
STOKES CORP., F. J., 5500 Tabor Rd., Philadelphia 20, Pa. ADV. PG. 268
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Union Steam Pump Co., Battle Creek, Mich.
Vacuum Industrial Applications, Ltd., Netherton Rd., Wishaw, Lanarkshire, Scotland
Varian Associates, 611 Hansen Way, Palo Alto, Calif.
Veeco Vacuum Corp., 86 Denton Ave., New Hyde Park, N. Y.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10
WHEELER MFG. CO., C. H., 19th & Lehigh Sts., Philadelphia 32, Pa. ADV. PG. 244

PURIFIERS—Water

See WATER CONDITIONERS

QUARTZ—Fused

Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
General Electric Co., Nela Park, Cleveland 12, Ohio
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Gordon Co., Claud S., 619 W. 30th St., Chicago 16, Ill.
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany
Kahl Scientific Instrument Corp., P. O. Box 1166, El Cajon, Calif.
Laboratory Equipment Corp., St. Joseph, Mich.
Phoenix Precision Instrument Co., 3803—05 N. Fifth St., Philadelphia, Pa.
Quartz Products Corp., 688 Somerse St., Plainfield, N. J.
Quartz & Silice, 8 rue d'Anjou, Paris, France
Thermal American Fused Quartz Co., Inc., 15—20 Salem St., Dover, N. J.

RADIOACTIVE WASTE DISPOSAL

See SERVICES

RADIOGRAPHIC EQUIPMENT— Gamma Ray

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada. ADV. PG. 155
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
BUDD CO., NUCLEAR SYSTEMS DIV., 2950 Roberts Ave., Philadelphia 32, Pa. ADV. PG. 187
Canadian Radium & Uranium Corp., 630 Fifth Ave., New York 20, N. Y.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Falk & Co., Ltd., M., Emefco House, Bell St., Reigate (Surrey), England
Gamma Industrie, 52, Rue de Dunkerque, Paris, France
General Radiological, Ltd., 15—18 Clipstone St., London, W. 1, England
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
Isotope Products Div., Canadian Curtiss-Wright, Ltd., Davis Rd., Oakville, Ontario, Canada
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
Knapp Mills, Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Nuclear Engineering Ltd., Woolwich Rd., London S. E. 7, England
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35
RADIUM CHEMICAL CO., 161 E. 42nd St., New York 17, N. Y. ADV. PG. 241
St. John X-Ray Laboratory, Califon, N. J.
Technical Operations, Inc., South Ave., Burlington, Mass.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Western Radiation Lab., 1107 W. 24th St., Los Angeles 7, Calif.

RADIOGRAPHIC EQUIPMENT— X-Ray

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Andel & Co., Inc., 5218 N. Kedzie Ave., Chicago 25, Ill.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
Atomic Laboratories, Berkeley, Calif.
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
Balteau Electric Corp., New & Meadow Sts., Stamford, Conn.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
General Radiological, Ltd., 15-18 Clipstone St., London, W. 1, England
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
HIGH VOLTAGE ENGINEERING CORP., S. Bedford St., Burlington, Mass ADV. PG. 189
MEILLON, INC., GEORGE T., 132 Nassau St., New York 38, N. Y. ADV. PG. 243
Mullard Equipment Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Philips Electronics Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35
Radiation Dynamics Inc., Westbury Industrial Park, Westbury, N. Y.
Resitron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
St. John X-Ray Laboratory, Califon, N. J.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
X-Ray Department of General Electric Co., 4855 Electric Ave., Milwaukee 1, Wis.

RADIOISOTOPES

See ISOTOPES—Radioactive

RARE EARTHS

See METALS, ALLOYS & COMPOUNDS (Including RARE EARTHS).

REACTOR CONTROLS

See CONTROLS, GAGES, METERS

REACTOR ECONOMICS CONSULTING
See SERVICES

REACTOR FUELS
See FUEL ELEMENTS

REACTOR HAZARD EVALUATION
See SERVICES

REACTOR PRESSURE VESSELS
See VESSELS—Pressure

REACTORS
1. Critical Assemblies
2. Isotope Production
3. Materials Testing
4. Power
5. Research
6. Training

ACF INDUSTRIES, INC., NUCLEAR PRODUCTS-ERCO DIV., 508 Kennedy St., N. W., Washington 11, D. C. ADV. PG. 43 3, 4, 5, 6.
AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany 1, 3, 4, 5, 6.
A.E.I.-John Thompson Nuclear Energy Co. Ltd. Radbroke Hall Knutsford, Cheshire, England 4, 5.
AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y. 1, 2, 3, 4, 5, 6.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169 1, 2, 3, 4, 5, 6.
Aeronutronic Systems, Inc., 1234 Air Way, Glendale Calif. 3, 4, 5, 6.
ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179 4, 5.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85 4.
American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
American-Standard Atomic Energy Div., 1682 Broadway, Redwood City, Calif. 4, 5, 6.
Atlas Engineering Co., 176 Blue Hill Ave., Roxbury, Mass. 3, 4.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237 6.
ATOMICS INTERNATIONAL DIV. OF NORTH AMERICAN AVIATION, INC., P. O. Box 309, Canaoga Park, Calif. ADV. PG. Third Cover 4, 5, 6.
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96 1, 2, 3, 4, 5, 6.
Babcock & Wilcox Ltd., Babcock House, 209 Eustron Rd., London N. W. 1, England 4.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145 1, 2, 3, 5, 6.
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa. 3, 4.
CANADAIR LTD., P. O. Box 6987, Montreal, Que., Canada ADV. PG. 185 1, 2, 3, 4, 5, 6.
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y. 1, 2, 3, 4, 5, 6.
Communication Accessoires Co., Lee's Summit, Mo. 1, 4.
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149 3, 4, 5.
Condenser Service & Engineering Co., Inc., 150 Observer Highway, Hoboken, N. J. 4, 5.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif. 3, 4, 5.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J. 2, 3, 4, 5, 6.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill. 3, 5, 6.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181 1, 2, 3, 4, 5, 6.
Ebasco Services, Inc., 2 Rector St., New York 6, N. Y. 2, 3, 4, 5, 6.
Electro Engineering Works, 401 Preda St., San Leandro, Calif. 4.
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y. 4.
FORD INSTRUMENT CO., DIV. OF SPERRY-RAND CORP., 31-10 Thomson Ave., Long Island City 1, N. Y. ADV. PG. 183 4.
GENERAL ATOMIC DIV. OF GENERAL DYNAMICS CORP., P. O. Box 608, San Diego 12, Calif. ADV. PG. 83 2, 4, 5, 6.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39 1, 2, 3, 4, 5, 6.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2. 1, 4.
Goslin Electric & Mfg. Co., 2921 W. Olive St., Burbank, Calif. 4.
Industrial Transformer Corp., Gouldsboro, Pa. 4.
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268 6.
K-V Transformer Corp., 20 E. Franklin St., Danbury, Conn. 4.
KELLEY & CO., O. G., 98 Taylor St., Dorchester, Mass. ADV. PG. 64, 65 3, 4, 5.
MALAKER ASSOCIATES, STEPHEN F., 24 Commerce St., Newark, N. J. ADV. PG. 249 5, 6.
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md. 1, 4, 5.
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y. 5, 6.
Mid-Century Instrumatic Corp., 611 Broadway, New York 12, N. Y. 6.
Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 1, Wis. 1.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago 10, Ill. ADV. PG. 91 6.
NUCLEAR DEVELOPMENT CORP. OF AMERICA, 5 New St., White Plains, N. Y. ADV. PG. 16 1, 3, 4, 5, 6.
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif. 1, 3, 4, 5, 6.
Perkin Engineering Corp., 345 Kansas St., El Segundo, Calif. 4.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63 1, 5, 6.
Reactor Motors Div., Thiokol Chemical Corp., Denville, N. J. 5.
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo. 4.
Weltronic Co., 19500 W. Eight Mile Rd., Detroit 41, Mich. 4.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10 1, 3, 4.
Willamette Iron & Steel Co., 2800 N. W. Front Ave., Portland 10, Ore. 1, 2, 3, 4, 5.

RECOMBINERS—Hydrogen & Oxygen
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.

RECORDERS
See also CONTROLS; GAGES; METERS

RECORDERS—Graphic
AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Alden Electronic & Impulse Recording Equipment Co., Westboro, Mass.
Ampex Corp., Instrumentation Div., 934 Charter St., Redwood City, Calif.
ATOMIC ACCESSORIES INC., 244-04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
Barnes Development Co., 213 W. Baltimore Pike, Lansdowne, Pa.
Barton Instrument Corp., 580 Monterey Pass Rd., Monterey Park, Calif.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Bruel & Kjaer, Naerum, Denmark
Brush Instruments Div. of Clevite Corp., 3405 Perkins Ave., Cleveland 14, Ohio
Canadian Applied Research, Ltd., 1500 O'Connor Drive, Toronto 16, Ontario, Canada
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre-Villa, Pasadena, Calif. ADV. PG. 57
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Daimo Victor Co., Div. of Textron Inc., 1515 Industrial Way, Belmont, Calif.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Electric Tachometer Corp., 69th & Upland Sts., Philadelphia 42, Pa.
Electronic Processes Corp., 2190 Folsom St., San Francisco 10, Calif.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Esterline-Angus Co., Inc., P. O. Box 596, Indianapolis 6, Ind.
Fielden Electronics Ltd., Paston Rd., Whytenshawe, Manchester, England
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston, Ill. ADV. PG. 229
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
Helland Div. of Minneapolis-Honeywell Regulator Co., 5200 E. Evans Ave., Denver 22, Colo.
Hogan Laboratories, Inc., 155 Perry St., New York 14, N. Y.
Industrial Instrument Div., Mandrel Industries, Inc., 5134 Glenmont, Houston, Texas
LIBRASCOPE, INC., 808 Western Ave., Glendale Calif. ADV. PG. 246
Magnetic Instruments Co., Inc., 546 Commerce St., Thornwood, N. Y.
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Moseley Co., F. L., 409 N. Fair Oaks Ave., Pasadena, Calif.
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. ADV. PG. 198, 199
Partlow Corp., The, Dept. NBG-58, New Hartford, N. Y.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Photovolt Corp., 95 Madison Ave., New York 16, N. Y.
Photron Instrument Corp., 6516 Detroit Ave., Cleveland 2, Ohio
Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Sunvic Controls Ltd., 10 St., Strand, London, W. C. 2, England
Swartwout Co., 18511 Euclid Ave., Cleveland 12, Ohio
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas
Varian Associates, 611 Hansen Way, Palo Alto, Calif.
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

RECORDERS—High-Speed Digital
Ampex Corp., Instrumentation Div., 934 Charter St., Redwood City, Calif.
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. III
Baldwin-Lima-Hamilton Corp., Electronics & Instrumentation Div., 42 Fourth Ave., Waltham 54, Mass.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
DI-AN Controls, Inc., 40 Leon St., Boston 15, Mass.
Electromation Co., 1646 18th St., Santa Monica, Calif.
Electronic Associates, Inc., Long Branch N. J.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Hogan Laboratories, Inc., 155 Perry St., New York 14, N. Y.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass. ADV. PG. 257
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Radiation, Inc., P. O. Box 37, Melbourne, Fla.
Sangamo Electric Co., Electronics Div., Springfield, Ill.
Streeter-Amet Co., Grayslake, Ill.
Taller & Cooper, Inc., 75 Front St., Brooklyn, N. Y.
Telectro Industries Corp., 35-16 37th St., Long Island City 1, N. Y.

RECORDERS—Line
AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Alden Electronic & Impulse Recording Equipment Co., Westboro, Mass.
Ampex Corp., Instrumentation Div., 934 Charter St., Redwood City, Calif.
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill.,
Bogen Co., David, Dept. MHN, P. O. Box 500, Paramus, N. J.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Hays Corp., Michigan City 40, Ind.
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Measurement Engineeering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Taller & Cooper, Inc., 75 Front St., Brooklyn, N. Y.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas

RECORDERS—Magnetic Tape
Ampex Corp., Instrumentation Div., 934 Charter St., Redwood City, Calif.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Minneapolis-Honeywell Regulator Co., 10721 Hanna

St., Beltsville, Md.
Radio Corp. of America, Industrial Electronic Products Div., Camden 2, N. J.
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Vic-Dar Div., Victor Adding Machine Co., 3900 N. Rockwell St., Chicago 18, Ill.

RECORDERS—Multichannel

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Alden Electronic & Impulse Recording Equipment Co., Westboro, Mass.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
Ampex Corp., Instrumentation Div., 934 Charter St., Redwood City, Calif.
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Brush Instruments Div. of Clevite Corp., 3405 Perkins Ave., Cleveland 14, Ohio
Century Electronics & Instruments, Inc., P. O. Box 6216, Tulsa 10, Okla.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. **ADV. PG. 57**
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. **ADV. PG. 220**
Edin Co., A Div. of Epsco, Inc., 207 Main St., Worcester, Mass.
Electric Tachometer Corp., 68th & Upland Sts., Philadelphia 42, Pa.
Electromation Co., 1646 18th St., Santa Monica, Calif.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E., 13, England
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Fielden Electronics, Ltd., Paston Rd., Whytenshawe, Manchester, England
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. **ADV. PG. 94, 95**
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. **ADV. PG. 37-39**
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Hagan Chemical & Controls, Inc., 323 Fourth Ave., Pittsburgh 22, Pa.
Hansen-Gorrill-Brian, Inc., 85 Hazel St., Glen Cove, N. Y.
Hathaway Instrument Div., Hamilton Watch Co., 5800 E. Jewell, Denver, Colo.
Helland Div. of Minneapolis-Honeywell Regulator Co., 5200 E. Evans Ave., Denver 22, Colo.
Industrial Instrument Div., Mandrel Industries, Inc., 5134 Glenmont, Houston, Texas
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass. **ADV. PG. 257**
Mid-Century Instrumatic Corp., 611 Broadway, New York 12, N. Y.
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Nash & Thompson Ltd., Oakcroft Rd., Chessington, Surrey, England
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. **ADV. PG. 198, 199**
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. **ADV. PG. 146**
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. **ADV. PG. 86**
Photron Instrument Co., 6516 Detroit Ave., Cleveland 2, Ohio
Radiation, Inc., P. O. Box 37, Melbourne, Fla.
Rank Cintel Ltd., Worsley Bridge Rd., London, S. E. 26, England
Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Sangamo Electric Co., Electronics Div., Springfield, Ill.
Stoelting Co., C. H., 424 N. Homan Ave., Chicago 24, Ill.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Telectro Industries Corp., 35-16 37th St., Long Island City 1, N. Y.
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. **ADV. PG. 151, 152, 157**
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.
Westronics, Inc., 3605 McCart St., Fort Worth, Texas

RECORDERS—Nuclear Radiation

See COUNTERS; SCALERS, etc.

RECORDERS—Potentiometer

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Alden Electronic & Impulse Recording Equipment Co., Westboro, Mass.
Ampex Corp., Instrumentation Div., 934 Charter St., Redwood City, Calif.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Bruel & Kjaer, Naerum, Denmark
Brush Instruments Div. of Clevite Corp., 3405 Perkins Ave., Cleveland 14, Ohio
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. **ADV. PG. 220**
Dawe Instruments Ltd., 99-101 Uxbridge Rd., Ealing, London W. 5, England
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Fielden Electronics, Ltd., Paston Rd., Whytenshawe, Manchester, England
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. **ADV. PG. 94, 95**
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. **ADV. PG. 37-39**
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Industrial Instrument Div., Mandrel Industries, Inc., 5134 Glenmont, Houston, Texas
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. **ADV. PG. 72, 73**
Magnetic Instruments Co., Inc., 546 Commerce St., Thornwood, N. Y.
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. **ADV. PG. 198, 199**
Partlow Corp., The, Dept. NBG-58, New Hartford, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. **ADV. PG. 86**
Phoenix Precision Instrument Co., 3803-05 N. Fifth St., Philadelphia, Pa.
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. **ADV. PG. 271**
Stoelting Co., C. H., 424 N. Homan Ave., Chicago 24, Ill.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas
Thermo Electric Co., Inc., Saddle Brook, N. J.
Varian Associates, 611 Hansen Way, Palo Alto, Calif.
West Instrument Corp., 4363 W. Montrose Ave., Chicago 41, Ill.
Westronics, Inc., 3605 McCart St., Fort Worth, Texas

RECTIFIERS—Electronic

See POWER SUPPLIES

RECTIFIERS—Metallic

See also DIODES

AEG—ABT KEA, Hochhaus, Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. **ADV. PG. 84, 85**
Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N. J.
Bradley Laboratories, Inc., 168 Columbus Ave., New Haven 10, Conn.
Christie Electric Corp., 3410 W. 67th St., Los Angeles 43, Calif.
FANSTEEL METALLURGICAL CORP., North Chicago, Ill. **ADV. PG. 172**
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. **ADV. PG. 37-39**
General Electric Co., Semiconductor Products Dept., Electronics Park, Syracuse, N. Y.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Nuclear Corp., 550 Fifth Ave., New York 26, N. Y.
Hughes Products, Airport Station, Los Angeles 45, Calif.
ITT Components Div., International Telephone & Telegraph Corp., P. O. Box 412, Clifton, N. J.
Leland, Inc., G. H., 123 Webster, Dayton 2, Ohio
Mallory & Co., Inc., P. R., 58 S. Gray St., Indianapolis 6, Ind.
Pacific Semiconductors, Inc., 10451 W. Jefferson Blvd., Culver City, Calif.
International Rectifier Corp., 1521 E. Grand Ave., El Segundo, Calif.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. **ADV. PG. 86**
Rapid Electric Co., 2881 Middletown Rd., New York, N. Y.
Raytheon Mfg. Co., Nuclear Power Group, 28 Seyon St., Waltham 54, Mass.
Sanford Miller Co., 691 Bedford Ave., Brooklyn 6, N. Y.
Sarkes Tarzian, Inc., Rectifier Div., 415 N. College Ave., Bloomington, Ind.
Sperry Gyroscope Div. of Sperry-Rand Corp., Great Neck, N. Y.
Syntron Co., 355 Lexington Ave., Homer City, Pa.
Ther Electric & Machine Works, 15 S. Jefferson St., Chicago 6, Ill.
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.

REFRACTORIES

See also CERAMICS

Acme Brick Co., P. O. Box 425, Fort Worth 1, Texas
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. **ADV. PG. 3, 96**
Basic, Inc., 845 Hanna Bldg., Room 845, Cleveland 14, Ohio
Carborundum Co., The, Refractories Div., Perth Amboy, N. J.
CORNING GLASS WORKS, Corning, N. Y. **ADV. PG. 219**
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. **ADV. PG. 181**
Du-Co Ceramics Co., Box 587, Butler 8, Pa.
Eagle-Picher Co., Cincinnati, Ohio
Emerson & Cuming, Inc., 869 Washington St., Canton, Mass.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Frenchtown Porcelain Co., Frenchtown, N. J.
Gladding, McBean & Co., 2901 Los Feliz Blvd., Los Angeles 39, Calif.
Great Lakes Carbon Corp., 18 E. 48th St., New York, N. Y.
Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Pa.
Johns-Manville, 22 E. 40th St., New York 16, N. Y.
Laboratory Equipment Corp., St. Joseph, Mich.
Louthan Mfg. Co., East Liverpool, Ohio
Mackay, Inc., A. D., 198 Broadway, New York 38, N. Y.
Morganite, Inc., 33-02 48th Ave., Long Island City 1, N. Y.
NATIONAL BERYLLIA CORP., 4501 Dell Ave., North Bergen, N. J. **ADV. PG. 254**
NATIONAL CARBON CO., DIV. OF UNION CARBIDE CORP., 30 E. 42nd St., New York 17, N. Y. **ADV. PG. Fourth Cover**
National Lead Co., 111 Broadway, New York 6, N. Y.
NORTON CO., 1 New Bond St., Worcester 6, Mass. **ADV. PG. 77**
Robinson Clay Products Co., The, 65 W. State St., Akron 9, Ohio
Sauereisen Cements Co., Sauereisen Bldg., Pittsburgh 15, Pa.
Saxonburg Ceramics, Saxonburg, Pa.
Steward Mfg. Co., D. M., E. 36th St., Chattanooga 1, Tenn.
United States Graphite Co., Div. of The Wickes Corp., Holland Ave., Saginaw 5, Mich.
Wah Chang Corp., 233 Broadway, New York 7, N. Y.

REGISTERS—Electromechanical

See COUNTERS—Electromechanical

REGULATORS—Feedwater

AEG-ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Atlas Valve Co., 280 South St., Newark 5, N. J.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Black, Sivalls & Bryson Inc., 7500 E. 12th St., Kansas City 26, Mo.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. **ADV. PG. 94, 95**
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Hays Corp., Michigan City 40, Ind.
Kieley & Mueller Co., Inc., 64 Genung St., Middletown, N. Y.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Squires Co., C. E., 18805 Syracuse Ave., Cleveland 10, Ohio
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Watts Regulator Co., 10 Embankment St., Lawrence, Mass.

REGULATORS—Voltage

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Allen-Bradley Co., 136 W. Greenfield Ave., Milwaukee 4, Wis.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. **ADV. PG. 84, 85**
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. **ADV. PG. 106**
Beta Electric Corp., a Div. of Sorensen Co., Inc., Richards Ave., South Norwalk, Conn.
Beva Laboratory, 22 Parker Ave., P. O. Box 478, Trenton 3, N. J.
Central Transformer Co., 910 W. Jackson Blvd., Chicago 7, Ill.
Clark Controller Co., 146 E. 152nd St., Cleveland 10, Ohio
Consolidated Controls Corp., Durant Ave., Bethel, Conn.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. **ADV. PG. 220**
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio

Electric Machinery Mfg. Co., 800 Central Ave., Minneapolis 13, Minn.
Electric Regulator Corp., Norwalk, Conn.
Electronic Measurements Co., Inc., Lewis St. & Maple Ave., Eatontown, N. J.
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
Fielden Electronics, Ltd., Paston Rd., Whytenshawe, Manchester, England
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
Industrial Instrument Div., Mandrel Industries, Inc., 5134 Glenmont, Houston, Texas
KEITHLEY INSTRUMENTS, INC., 12415 Euclid Ave., Cleveland 6, Ohio ADV. PG. 104
KEPCO LABORATORES, INC., 131—38 Sanford Ave., Flushing 55, N. Y. ADV. PG. 173
Leach Corp., 18435 Susana Rd., Compton, Calif.
Lindberg Engineering Co., 2450 W. Hubbard St., Chicago 12, Ill.
Magnetic Amplifiers, Inc., 632 Tinton Ave., Bronx 55, N. Y.
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
N. J. E Corp., 345 Carnegie Ave., Kenilworth, N. J.
Northeast Scientific Corp., 817 Concord Ave., Cambridge 38, Mass.
Perkin Engineering Corp., 345 Kansas St., El Segundo, Calif.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Power Sources, Inc., Burlington, Mass.
Rank Cintel Ltd., Worsley Bridge Rd., London, S. E. 26, England
RED BANK DIV., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Sola Electric Co., 4633 W. 16th St., Chicago 50, Ill.
Sorensen & Co., Inc., Richards Ave., South Norwalk, Conn.
Specialty Engineering & Electronics Co., 79 Clifton Place, Brooklyn 38, N. Y.
Superior Electric Co., 83 Laurel St., Bristol, Conn.
Tel-Instrument Electronics Corp., 728 Garden St., Carlstadt, N. J.
Transitron Electronics Corp., 168 Albion St., Wakefield, Mass.
United Transformer Corp., 150 Varick St., New York 13, N. Y.
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Weltronic Co., 19500 W. Eight Mile Rd., Detroit 41, Mich.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.

RELAYS

1. A-C
2. D-C
3. Electronic
4. Time Delay

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany 1, 2, 3, 4.
AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y. 1, 2, 3, 4.
Abrams Instrument Corp., 600—620 E. Shiawassee St., Lansing, Mich. 4.
Adams & Westlake Co., Michigan St., Elkhart Ind. 1, 2, 4.
Advanced Products Co., 59 Broadway, North Haven, Conn. 4.
Airpax Products Co., Seminole Div., Fort Lauderdale, Fla. 4.
Allen-Bradley Co., 136 W. Greenfield Ave., Milwaukee 4, Wis. 1, 2, 3, 4.
Allied Control Co., Inc., 2 East End Ave., New York 21, N. Y. 1, 2, 4.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85 1, 2.
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md. 3.
Amperite Co., Inc., 561 Broadway, New York 12, N. Y. 4.
Automatic Electric Sales Corp., North Lake, Ill. 1, 2, 4.
AUTOMATIC SWITCH CO., 56-N Hanover Rd., Florham Park, N. J. ADV. PG. 99 1, 2, 3, 4.
B/W Controller Corp., 2200 E. Maple Rd., Birmingham, Mich. 1, 3.
Babcock Relays, Inc., 1640 Monrovia Ave., Costa Mesa, Calif. 1, 2, 3, 4.
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill. 2.
Bently Scientific Co., 2811 Seventh St., Berkeley 10, Calif. 3.
Blonder-Tongue Laboratories, Inc., 9—25 Alling St., Newark 2, N. J. 4.
Branson Corp., Jefferson Rd., Whippany, N. J. 1, 2, 4.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn. 1, 2, 3.
Clark Controller Co., 1146 E. 152nd St., Cleveland 10, Ohio 1, 2, 4.
Comar Electric Co., 3349 W. Addison St., Chicago 18, Ill. 1, 2, 3, 4.
Couch Ordnance Inc., Relay Div., 3 Arlington St., North Quincy 71, Mass. 2, 3.
Cramer Controls Corp., Box 13, Centerbrook, Conn. 4.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220 1, 2, 3, 4.
Cutler-Hammer, Inc., 412 N. 12th St., Milwaukee 1, Wis. 1, 2, 3, 4.
Deltron, Inc., 2905 Lelthgow St., Philadelphia 33, Pa. 3.
Durakool, Inc., 1010 N. Main St., Elkhart, Ind. 4.
Eagle Signal Corp., 202 20th St., Moline, Ill. 4.
Ebert Electronics Corp., 212—26 Jamaica Ave., Queens Village 28, N. Y. 1, 2, 3, 4.
Edison Industries, Thomas A., Instrument Div., West Orange, N. J. 2, 4.
Electro-Physics Co., 287—L Broadway, New York 7, N. Y. 3.
Electronic Control Corp., 1573 E. Forest Ave., Detroit 7, Mich. 3, 4.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England 1, 2, 3.
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241 2, 3.
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236 2.
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y. 1.
Ericssons Telephones, Ltd., Instrument Div., High Church St., New Basford, Nottingham, England 2.
Farmer Electric Products Co., Inc., 2300 Washington St., Newton Lower Falls, Mass. 3.
General Automatic Corp., 12 Carlton Ave., Mountain View, N. J. 1, 2, 3, 4.
General Controls Co., 801 Allen Ave., Glendale 1, Calif. 1.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39 1, 2, 3, 4.
General Electric Co. Ltd. of England, Magnet House, Kingsway London, W. C. 2 1, 2, 3, 4.
Guardian Electric Co. 1625 W. Walnut St. Chicago 12, Ill. 1, 2, 3, 4.
H-B Instrument Co., American & Bristol Sts., Philadelphia 40, Pa. 1, 2, 3.
Haledy Electronics Co., 57 William St., New York 5, N. Y. 3.
Haydon Co., A. W., The, 232 N. Elm St., Waterbury, Conn. 3, 4.
Hetherington, Inc., 1420 Delmar Drive, Folcroft, Pa. 1, 2, 3, 4.
Hi-G, Inc., Bradley Field, Windsor Locks, Conn. 1, 2.
Hughes Products, Airport Station, Los Angeles 45, Calif. 3.
Industrial Timer Corp., 1407 McCarter Highway, Newark 4, N. J. 4.
Iron Fireman Mfg. Co., Electronics Div., 2838 S. E. Ninth Ave., Portland 2, Ore. 3.
Jennings Radio Mfg. Corp., 970 McLaughlin Ave., P. O. Box 1278, San Jose 12, Calif. 1, 2.
Jordan Electronics, A Div. of the Victoreen Instrument Co., 3025 W. Mission Rd., Alhambra, Calif. 4
KEITHLEY INSTRUMENTS, INC., 12415 Euclid Ave., Cleveland 6, Ohio ADV. PG. 104 3.
Kellogg Switchboard & Supply Co., IT&T Div., 6650 S. Cicero Ave., Chicago 38, Ill. 1, 2, 3.
LaPine & Co., Arthur S., 6001 S. Knox Ave., Chicago 29, Ill. 3.
Leach Corp., 18435 Susana Rd., Compton, Calif. 1, 2, 3, 4.
Lee Electric & Mfg. Co., 2806 Clearwater St., Los Angeles 39, Calif. 2, 4.
Leland, Inc., G. H., 123 Webster, Dayton 2, Ohio 2.
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N. Y. 1, 2.
Mallory & Co., Inc., P. R., 58 S. Gary St., Indianapolis 6, Ind. 1, 2, 3.
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn. 3.
Marion Electrical Instrument Co., Grenier Field, Manchester, N. H. 2.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada 3, 4.
Mercoid Corp., 4201 Belmont Ave., Chicago 41, Ill. 1, 2.
Metals & Controls Corp., Spencer Thermostat Div., 40 Forest St., Attleboro, Mass. 1.
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn. 1, 3.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa. 3.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y. 1, 3.
Ohmite Mfg. Co., 3601 Howard St., Skokie, Ill. 1, 2, 4.
Phaostron Instrument & Electronic Co., 151 Pasadena Ave., South Pasadena, Calif. 1, 2.
Phillips Control Co., 59 W. Washington St., Joliet, Ill. 1, 2, 3, 4.
Pollak Corp., Joseph, 81 Freeport St., Boston 22, Mass. 1, 2, 3, 4.
Potter & Brumfield, Inc., Princeton, Ind. 1, 2, 3, 4.
Price Electric Corp., Frederick, Md. 1,2,3,4.
RBM Div., Essex Wire Corp., 131 Godfrey, Logansport, Ind. 1, 2, 4.
Radio Corporation of America, Industrial Electronic Products Div., Camden 2, N. J. 2.
Resitron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif. 2.
Servo-Tek Products Co., 1086 Goffle Rd., Hawthorne, N. J. 3.
Sigma Instruments, Inc., 180 Pearl St., South Braintree, Boston 85, Mass. 1, 2, 3.
Simpson Electric Co., Div. of American Gage & Machine Co., 5028 W. Kinzie St., Chicago 44, Ill. 1, 2.
STEVENS-ARNOLD, INC., 7 Elkins St., Boston, Mass. ADV. PG. 160
Struthers-Dunn, Inc., Lambs Rd., Pitman, N. J. 1, 2, 3, 4.
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y. 2.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England 1, 2, 3, 4.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif. 2, 3.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y. 3, 4.
Terado Co., 1068 Raymond Ave., St. Paul 8, Minn. 2, 3.
Torwico Electronics, Inc., 1090 Morris Ave., Union, N. J. 4.
Transonic, Inc., 808 16th St., Box 59, Bakersfield, Calif. 3.
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y. 3.
Tung-Sol Electric, Inc., 95 Eighth Ave., Newark 4, N. J. 4.
Victory Engineering Corp., 77 Springfield Rd., Union, N. J. 1, 2, 3, 4.
Walkirt Co., The, 141 W. Hazel St., Inglewood 3, Calif. 3.
Ward Leonard Electric Co., 621 South St., Mt. Vernon, N. Y. 1, 2.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10 1, 2, 4.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J. 1, 2, 3, 4.
Wheelock Signals, Inc., 273 Branchport Ave., Long Branch, N. J. 1, 2.
Wilson & Co., G. C., 1915 Eighth Ave., Huntington, W. Va. 3, 4.
Worner Electronic Devices, Rankin, Ill. 3.

REMOTE HANDLING DEVICES

See MANIPULATORS—Remote and TONGS—Handling

RESINS—Ion Exchange

Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
Bio-Rad Laboratories, 1257 S. 32nd St., Richmond, Calif.
Chemical Process Co., Redwood City, Calif.
Chem-Pure Service Co., 762 Industrial Rd., San Carlos, Calif.
Dow Chemical Co., Midland, Mich.
Elgin Softener Corp., 179 S. Grove Ave., Elgin, Ill.
Graver Water Conditioner Co., 216 W. 14th St., New York 11, N. Y.
Illinois Water Treatment Co., 840 Cedar St., Rockford, Ill.
National Aluminate Corp., 6216 W. 66th Place, Chicago 38, Ill.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Raybestos-Manhattan, Inc., 75 E. Main St., Stratford, Conn.
Rohm & Haas Co., Washington Square, Philadelphia 5, Pa.

RESISTORS

NOTE: Various types of resistors are not indicated in this listing. Contact manufacturer for specific type(s) desired.

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Ace Electronics Associates, Inc., 99 Dover St., Somerville 44, Mass.
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.
Allen-Bradley Co., 136 W. Greenfield Ave., Milwaukee 4, Wis.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allies Products Corp., P. O. Box 188, Kenadall Station, Miami, Fla.
Arnhold Ceramics, Inc., 1 E. 57th St., New York 22, N. Y.
Automatic & Precision Mfg. Co., 252 Hawthorne Ave., Yonkers 5, N. Y.
Barnes Development Co., 213 W. Baltimore Pike, Lansdowne, Pa.
Bird Electronic Corp., 1800 E. 38th St., Cleveland, 14, Ohio
Bourns Laboratories, Inc., 6135 Magnolia Blvd., Riverside, Calif.
Carborundum Co., The, Refractories Div., Perth Amboy, N. J.
Centralab Division of Globe-Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.
Cinema Engineering Co., Div. of Aerovox Corp., 1100 Chestnut St., Burbank, Calif.
Clark Controller Co., 1146 E. 152nd St., Cleveland 10, Ohio
Clarostat Mfg. Co., Inc., Dover, New Hampshire
Computer Instruments Corp., 92 Madison Ave., Hempstead, N. Y.
Continental Carbon Div. of Wirt Co., 5221 Greene St., Philadelphia 44, Pa.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
Dale Products, Inc., Columbus, Neb.

Daven Co., The, Route 10, Livingston, N. J.
Electro Measurements, Inc., 7524 SW Macadam Ave., Portland, Ore.
Erie Resistor Corp., 639 W. 12th St., Erie, Pa.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. **ADV. PG. 37-39**
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
GENERAL TRANSISTOR CORP., 91—27 138th Place, Jamaica 35, N. Y. **ADV. PG. 165**
Hardwick Hindle, Inc., 40 Harmon St., Newark 5, N. J.
Hycor Div. of International Resistance Co., 12790 Bradley Ave., Sylmar, Calif.
Industrial Instruments, Inc., 89 Commerce Rd., Cedar Grove, N. J.
Instrument Resistors Co., 1036 Commerce Ave., Union, N. J.
International Resistance Co., 401 N. Broad St., Philadelphia 8, Pa.
K-F Development Co., 2606 Spring St., Redwood City, Calif.
Kellogg Switchboard & Supply Co., IT&T Div., 6650 S. Cicero Ave., Chicago 38, Ill.
Mallory & Co., Inc., P. R., 58 S. Gray St., Indianapolis 6, Ind.
Mepco Inc., 35—37 Abbett Ave., Morristown, N. J.
Minneapolis-Honeywell Regulator Co., Rubicon Instruments, Ridge Ave. at 35th St., Philadelphia 32, Pa.
Morganite, Inc., 33—02 48th Ave., Long Island City, 1, N. Y.
Ohmite Mfg. Co., 3601 Howard St., Skokie, Ill.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. **ADV. PG. 86**
PHYSICS RESEARCH LABORATORIES, P. O. Box 555, Hempstead, N. Y. **ADV. PG. 166**
Precision Inc., 730 Lyndale Ave., N., Minneapolis, Minn.
Pyrofilm Resistor Co., U. S. Highway 46, Parsippany, N. J.
Reon Resistor Corp., 117 Stanley Ave., Yonkers, N. Y.
Resistance Products Co., 914 S. 13th St., Harrisburg, Pa.
Shalicross Mfg. Co., Selma, N. C.
Spectrol Electronics Corp., 1704 S. Del Mar Ave., San Gabriel, Calif.
Speer Carbon Co., St. Marys, Pa.
Sprague Electric Co., North Adams, Mass.
Stackpole Carbon Co., St. Marys, Pa.
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas
Transformers, Inc., 200 Stage Rd., Vestal, N. Y.
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio **ADV. PG. 196, 202, 203**
Ward Leonard Electric Co., 621 South St., Mt. Vernon, N. Y.
Waters Manufacturing, Inc., Boston Post Rd., Wayland, Mass.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.
White Dental Mfg. Co., S. S., 10 East 40th St., New York 16, N. Y.
Winslow Co., Inc., 705 Lehigh Ave., P. O. Box 394, Union, N. J.

RHEOSTATS

See POTENTIOMETERS

SAMPLE CHANGERS—Automatic

See also PLANCHETS

Adler's Metal Works, 1310 Germantown Ave., Philadelphia 22, Pa.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. **ADV. PG. 67-70**
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Isotope Accessories Co., The, 53212 Westminster Ave., Philadelphia 31, Pa.
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. **ADV. PG. 91**
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. **ADV. PG. 247**
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. **ADV. PG. 86**
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TRACERLAB INC., 1601 Trapelo Rd., Waltham 54, Mass. **ADV. PG. 151, 152, 157**

SAMPLING—Air

See SERVICES

SAMPLING SYSTEMS—Fluid

ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. **ADV. PG. 106**
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. **ADV. PG. 237**
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. **ADV. PG. 144, 145**
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. **ADV. PG. 76**
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. **ADV. PG. 220**
Devco Engineering Inc., Control Systems Div., Pier Lane West, Caldwell Township, Caldwell, N. J.
Eberline Instrument Corp., P. O. Box 279, Santa Fe, N. M.
Fickien, 3rd, Joseph B., 1848 E. Mountain St., Pasadena 7, Calif.
Fleming Radio (Developments), Ltd., Stevenage, Herts, England, U. K.
Gast Mfg. Corp., P. O. Box 117-N, Benton Harbor, Mich.
GELMAN INSTRUMENT CO., Chelsea, Mich. **ADV. PG. 239**
HOKE, INC., Cresskill, N. J. **ADV. PG. 222**
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. **ADV. PG. 268**
KEWAUNEE MFG. CO., 5083 S. Center St., Adrian, Mich. **ADV. PG. 164**
Millipore Filter Corp., Bedford, Mass.
Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.
Nash & Thompson, Ltd., Oakcroft Rd., Chessington, Surrey, England
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. **ADV. PG. 146**
Phoenix Precision Instrument Co., 3803—05 N. Fifth St., Philadelphia, Pa.
Radiation Detection Co., 4047—49 Transport St., Palo Alto, Calif.
STAPLEX CO., THE, AIR SAMPLER DIV., 783 Fifth Ave., Brooklyn 32, N. Y. **ADV. PG. 234**
TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas **ADV. PG. 205**
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. **ADV. PG. 151, 152, 157**

SAMPLING—Water

See SERVICES

SCALERS—Battery Operated

ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. **ADV. PG. 237**
BAIRD-ATOMIC INC., 33 University Rd., Cambridge 38, Mass. **ADV. PG. 67-70**
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Dynatron Radio, Ltd., St. Peter's Rd., Furze Platt, Maidenhead, Berks, England
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium **ADV. PG. 241**
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. **ADV. PG. 254**
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. **ADV. PG. 91**
Nuclear Corp. of America, Inc., 400 Park Ave., New York 1, N. Y.
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey), England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. **ADV. PG. 247**
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. **ADV. PG. 271**
Rank Cintel Ltd., Worsley Bridge Rd., London, S. E. 26, England

SCALERS—Binary

See also COUNTERS

American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ATOMATION, INC., 5959 S. Hoover st., Los Angeles 44, Calif. **ADV. PG. 256**
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. **ADV. PG. 237**
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. **ADV. PG. 81**
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. **ADV. PG. 67-70**
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Deltime, Inc., 608 Fayette Ave., Mamaroneck, N. Y.
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
DI-AN Controls, Inc., 40 Leon St., Boston 15, Mass.
Douglas Radio Labs., 176 Norfolk Ave., Boston 19, Mass.
Elcor, Inc., Box 354, McLean, Va.
Electronic Engineering Co. of California, 1601 E. Chestnut St., Santa Ana, Calif.
El-Tronics, Inc., Suburban Station Bldg., Philadelphia, Pa.
Engineered Electronics Co., 506 E. First St., Santa Ana, Calif.
Exact Weight Scale Co., 538 E. Town St., Columbus 15, Ohio
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston, Ill. **ADV. PG. 229**
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. **ADV. PG. Second Cover**
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. **ADV. PG. 254**
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
Laboratory for Electronics, Inc., 75 Pitts St., Boston 15, Mass.
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
Navigation Computer Corp., 1621 Synder Ave., Philadelphia 45, Pa.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. **ADV. PG. 91**
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. **ADV. PG. 40**
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. **ADV. PG. 146**
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. **ADV. PG. 247**
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. **ADV. PG. 29**
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. **ADV. PG. 271**
Rank Cintel Ltd., Worsley Bridge Rd., London, S. E. 26, England
Ransom Research, P. O. Box 269, San Pedro, Calif.
Scientific Engineering Laboratory, 1510 6th St., Berkeley 10, Calif.
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. **ADV. PG. 184**
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. **ADV. PG. 51**
TRACERLAB INC., 1601 Trapelo Rd., Waltham 54, Mass. **ADV. PG. 151, 152, 157**
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
Walkirt Co., The, 141 W. Hazel St., Inglewood 3, Calif.

SCALERS—Decade

See also COUNTERS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Island City 6, N. Y. **ADV. PG. 186**
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. **ADV. PG. 256**
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. **ADV. PG. 237**
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. **ADV. PG. 81**
BAIRD-ATOMIC INC., 33 University Rd., Cambridge 38, Mass. **ADV. PG. 67-70**
Beckman/Berkeley Division, 2200 Wright Ave., Richmond 3, Calif.
Burroughs Corp., Electronic Tube Div., P. O. Box 1226, Plainfield, N. J.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
DI-AN Controls, Inc., 40 Leon St., Boston 15, Mass.
Dynatron Radio, Ltd., St. Peter's Rd., Furze Platt, Maidenhead, Berks, England
Electronic Engineering Co. of California, 1601 E. Chestnut St., Santa Ana, Calif.
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium **ADV. PG. 241**
El-Tronics, Inc., Suburban Station Bldg., Philadelphia, Pa.
Engineered Electronics Co., 506 E. First St., Santa Ana, Calif.
Ericssons Telephones, Ltd., Instrument Div., High Chuch St., New Basford, Nottingham, England
Erie Resistor Corp., 639 W. 12th St., Erie, Pa.
Exact Weight Scale Co., 538 E. Town St., Columbus 15, Ohio
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston, Ill. **ADV. PG. 229**
General Radiological Ltd., 15—18 Clipstone St., London, W. 1, England
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. **ADV. PG. Second Cover**
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
ISOTOPE DEVELOPMENTS LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England **ADV. PG. 226**
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
Laboratory for Electronics, Inc., 75 Pitts St., Boston 14, Mass.
Measurement Engineering Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
Navigation Computer Corp., 1621 Synder Ave., Philadelphia 45, Pa.
NUCLEAR-CHICAGO CORP., 229 E. Erie St., Chicago, Ill. **ADV. PG. 91**
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. **ADV. PG. 40**
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. **ADV. PG. 146**
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surrey), England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. **ADV. PG. 247**
PACKARD INSTRUMENT CO., INC., P. O. Box 428, La Grange, Ill **ADV. PG. 82**
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England

Patterson Moos Div., Universal Winding Co., 98—28 Van Wyck Expressway, Jamaica 18, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
PICKER X-RAY CORP., 25 S. Boradway, White Plains, N. Y. ADV. PG. 35
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Rank Cintel Ltd., Worsley Bridge Rd., London, S. E. 26, England
Ransom Research, P. O. Box 269, San Pedro, Calif.
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
VICTOREEN INSTRUMENT CO., 5800—11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203
Walkirt Co., The, 141 W. Hazel St., Inglewood 3, Calif.

SCALES

See BALANCES

SCANNERS—Isotope-Distribution

American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston, Ill. ADV. PG. 229
Isotope Accessories Co., The, 5312 Westminster Ave., Philadelphia 31, Pa.
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
LEVINTHAL ELECTRONIC PRODUCTS, INC., Stanford Industrial Park, Palo Alto, Calif. ADV. PG. 225
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass. ADV. PG. 257
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157

SCINTILLATION COUNTERS

See COUNTERS—Scintillation

SCINTLLATORS—Crystal

American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Island City 6, N. Y. ADV. PG. 186
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Berkeley Crystal Co., 1740 University Ave., Berkeley 3, Calif.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
CRYSTALS INC., 123 Woodland Ave., Dept. N.B.G., Westwood, N. J. ADV. PG. 228
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
HARSHAW CHEMICAL CO., THE, 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
ISOMET CORP., 118 Union St., Palisdades Park, N. J. ADV. PG. 232
LEVINTHAL ELECTRONIC PRODUCTS, INC., Stanford Industrial Park, Palo Alto, Calif. ADV. PG. 225
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass. ADV. PG. 257
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
Nash & Thompson, Ltd., Oakcroft Road, Chessington, Surrey, England
NATIONAL RADIAC, INC., 479 Washington St., Newark 2, N. J. ADV. PG. 233
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
NUCLEAR ENTERPRISES, LTD., 1750 Pembina Highway, Winnipeg, Canada ADV. PG. 270
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey) England
Precision Radiation Instruments, Inc., 5810 S. Normandie, Los Angeles 44, Calif.
Quartz Products Corp., 688 Somerset St., Plainfield, N. J.
Quartz & Silice, 8 rue d'Anjou, Paris, France
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill ADV. PG. 271
SINGLE CRYSTAL CORP. OF AMERICA, RD1 Saxonburg Blvd., Saxonburg, Pa. ADV. PG. 246
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
Syncor Products, 30 Eastern Ave., Malden 48, Mass.
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157

SCINTILLATORS—Liquid

AMERICAN TRADAIR CORP., SUB. OF EKCO ELECTRONICS, LTD., 34—01 30th St., Long Island City 6, N. Y. ADV. PG. 186
ARAPAHOE CHEMICALS, INC., 2800 Pearl St., Boulder, Colo. ADV. PG. 217
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
ISOMET CORP., 118 Union St., Palisades Park, N. J. ADV. PG. 232
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Nash & Thompson, Ltd., Oakcroft Road, Chessington, Surrey, England
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
Nuclear Enterprises (G.B) Ltd., Sighthill, Edinburgh, Scotland
NUCLEAR ENTERPRISES, LTD., 1750 Pembina Highway, Winnipeg, Canada. ADV. PG. 270
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surrey) England
PILOT CHEMICALS INC., 36 Pleasant St., Waterton 72, Mass. ADV. PG. 243
Quartz & Silice, 8 rue d'Anjou, Paris, France
SINGLE CRYSTAL CORP. OF AMERICA, RD 1, Saxonburg Blvd., Saxonburg, Pa. ADV. PG. 246
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157

SCINTILLATORS—Plastic

Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
CRYSTALS INC., 123 Woodland Ave., Dept. N.B.G., Westwood, N. J. ADV. PG. 228
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Dajac Laboratories, The Borden Co., Chemical Div., Leominster, Mass.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
ISOMET CORP., 118 Union St., Palisades Park, N. J. ADV. PG. 232
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass. ADV. PG. 257
Nash & Thompson, Ltd., Oakcroft Road, Chessington, Surrey, England
NATIONAL RADIAC, INC., 479 Washington St., Newark 2, N. J. ADV. PG. 233
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
Nuclear Enterprises (G.B.) Ltd., Sighthill, Edinburgh, Scotland
NUCLEAR ENTERPRISES, LTD., 1750 Pembina Highway, Winnepeg, Canda. ADV. PG. 270
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surrey) England
PILOT CHEMICALS, INC., 36 Pleasant St., Watertown 72, Mass. ADV. PG. 243
SINGLE CRYSTAL CORP. OF AMERICA, RD1, Saxonburg Blvd., Saxonburg, Pa. ADV. PG. 246
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TRACERLAB, INC. 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157

SCREENS—X-Ray

Allied Lead Construction Co., 6836 S. Chicago Ave,. Chicago, Ill.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
Du Pont de Nemours & Co., Inc., E. I., Wilmington 98, Del.
KELLEY & Co., O. G., 98 Taylor St., Dorchester, Mass. ADV. PG. 64, 65
MEILLON INC., GEORGE T., 132 Nassau St., New York 38, N. Y. ADV. PG. 243
NATIONAL RADIAC, INC., 479 Washington St., Newark 2, N. J. ADV. PG. 233
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
Quartz & Silice, 8 rue d'Anjou, Paris, France
RAY-PROOF CORP., 843 Canal St., Stamford, Conn. ADV. PG. 272
St. John X-Ray Laboratory, Califon, N. J.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Warren Corp., The, 2901 Brighton Rd., Pittsburgh 2, Pa.

SCRUBBERS—Gas

See also AIR CLEANERS

ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
American Agile Corp., P. O. Box 168, Bedford, Ohio
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Electric Boat Div., General Dynamics Corp., Gorton, Conn.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
GRAVER TANK & MFG. CO., INC., 4809 Tod Ave., East Chicago, Ind. ADV. PG. 195
KELLEY & CO., O. G., 98 Taylor St., Dorchester, Mass. AD. PG. 64, 65
Knight Co., Maurice A., 171 Kelly Ave., Akron, Ohio
Monsanto Chemical Co., Plastics Div., 600 Monsanto Ave., Springfield 2, Mass.
Pfaudler Co., The, A Div. of Pfaudler Permutit Inc, 1002 West Ave., Rochester, N. Y.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
Yerzley & Co., 744 Broad St., Newark 2, N. J.

SEALING COMPOUNDS

Andrew Co., Otis, 231—233 W. Court St., Cincinnati 2, Ohio
Biggs Co., Carl H., 2255 Barry Ave., West Los Angeles 64, Calif.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Chemical Development Corp., Endicott St., Danvers, Mass.
Dow Corning Corp., Midland, Mich.
Emerson & Cuming, Inc., 869 Washington St., Canton, Mass.
Garlock Packing Co., The, Palmyra, N. Y.
Hermaseal Co., Inc., 1101 Lafayette St., Elkhart, Ind.
Highside Chemicals, Inc., 4—10 Colfax Ave., Clifton, N. J.
Houghton Laboratories, Inc., Houghton Ave., Olean, N. Y.
Johns-Manville, 22 E. 40th St., New York 16, N. Y.
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 2, Pa.
Preco Chemical Corp., 415 Lexington Ave., New York 17, N. Y.
Sauereisen Cements Co., Sauereisen Bldg., Pittsburgh 15, Pa.
Sonneborn Sons, Inc., L., 404 Fourth Ave., New York 16, N. Y.

SEALS—Mechanical

Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
Andrew Co., Otis, 231—233 W. Court St., Cincinnati 2, Ohio
Automatic & Precision Mfg. Co., 252 Hawthorne Ave., Yonkers 5, N. Y
Bacon Industries, Inc., 192 Pleasant St., Watertown, Mass.
Belfab Corp., The, Municipal Airport, Daytona Beach, Fla.
Bristol Co., P. O. Box 1790, NBG, Waterbury 20, Conn.
BYRON JACKSON PUMPS, INC., SUB. OF BORG-WARNER CORP., P. O. Box 2017 A, Terminal Annex, Los Angeles 54, Calif. ADV. PG. 87-90
Chicago-Allis Mfg. Corp., 103 N. Greene St., Chicago 7, Ill.
Cleveland Graphite Bronze Div. of Clevite Corp., 17000 St. Clair Ave., Cleveland 10, Ohio
Connecticut Hard Rubber Co., New Haven 9, Conn.
CRANE PACKING CO., 6400 Oakton St., Morton Grove, Ill. ADV. PG. 182
Durametallic Corp., Factory St., Kalamazoo, Mich.
Emerson Plastics Corp., 1383 Seabury Ave., Bronx 61, N. Y.
Garlock Packing Co., The, Palmyra, N. Y.
ITT Components Div., International Telephone & Telegraph Corp., P. O. Box 412, Clifton, N. J.

Magnetic Seal Corp., Sowams Rd., Barrington, R. I.
Morganite, Inc., 33-02 48th Ave., Long Island City 1, N. Y.
NORTON CO., 1 New Bond St., Worcester 6, Mass. ADV. PG. 77
Polymer Corp., The, Reading, Pa.
ROBERTSHAW-FULTON CONTROLS CO., FULTON SYLPHON DIV., P. O. Box 400, Knoxville 1, Tenn. ADV. PG. 178
Sealol Corp., Warwick Industrial Park, Providence 5, R. I.
SOLAR AIRCRAFT CO., 2200 Pacific Highway, San Diego 12, Calif. ADV. PG. 143
Sparta Mfg. Co., Div. of U. S. Ceramic Tile Co., Dover, Ohio
Syntron Co., 355 Lexington Ave., Homer, Pa.
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England ADV. PG. 66
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Trio Machine Works, Inc., 3045 N. 3rd St., Philadelphia 33, Pa.
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
U. S. Gasket Co., Plastics Div. of The Garlock Packing Co., 600 N. 10th St., Camden 1, N. J.
United States Graphite Co., Div. of The Wickes Corp., Holland Ave., Saginaw 5, Mich.

SEPARATORS—Entrainment

Adams Co., Inc., R. P., 473 E. Park Drive, Buffalo 17, N. Y.
Anderson Co., V. D., Div. of International Basic Economy Corp., 1935 W. 96th St., Cleveland 2, Ohio
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
Babcock & Wilcox Ltd., Babcock House, 209 Euston Rd., London N. W. 1, England
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa.
Johnson Corp., 809 Wood St., Three Rivers, Mich.
Knight Co., Maurice A., 171 Kelly Ave., Akron, Ohio
Leavitt Machine Co., The, 10 E. River St., Orange, Mass.
Metal Textile Corp., 647 E. First Ave., Roselle, N. J.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32

SERVICES

ACTIVATION ANALYSIS

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
ASTRA, INC., P. P. Box 226, Raleigh, N. C. ADV. PG. 249
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Bios Laboratories, Inc., 17 W. 60th St., New York, 23, N. Y.
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
Ebasco Services, Inc., 2 Rector St., New York 6, N. Y.
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston Ill. ADV. PG. 229
GENERAL ATOMIC DIV. OF GENERAL DYNAMICS CORP., P. O. Box 608, San Diego 12, Calif. ADV. PG. 83
General Nuclear Engineering Corp., P. O. Box 245, Dunedin, Fla.
MALAKER ASSOCIATES, STEPHEN F., 24 Commerce St., Newark, N. J. ADV. PG. 249
Nuclear Metals, Inc., Concord, Mass.
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
Parsons Co., Ralph M., 617 W. Seventh St., Los Angeles 17, Calif.
Radiation Dynamics Inc., Westbury Industrial Park, Westbury, N. Y.
RADIOCHEMISTRY, INC., 3111 W. St. Catherine St., Louisville 10, Ky. ADV. PG. 242
TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas ADV. PG. 205
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157

ARCHITECT—Engineer

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
Arde Associates, 75 Austin St., Newark 2, N. J.
ASSOCIATED NUCLEONICS, INC., 975 Stewart Ave., Garden City, N. Y. ADV. PG. 192
Atmu Engineering Co., 173 W. Madison St, Chicago 2, Ill.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Becket & Associates, Welton, 5657 Wilshire Blvd., Los Angeles 36, Calif.
Blaw-Knox Co., 300 Sixth Ave., N.B., Pittsburgh 22, Pa.
Burns & Roe, Inc., 160 West Broadway, New York 13, N. Y.
Catalytic Construction Co., 1528 Walnut St., Philadelphia 2, Pa.
Condenser Service & Engineering Co., Inc., 150 Observer Highway, Hoboken, N. J.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Ebasco Services, Inc., 2 Rector St., New York 6, N. Y.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Ferguson Co., H. K., 11th at Walnut, Cleveland 14, Ohio
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
General Radionuclear Co., P. O. Box 407, Milford, Conn.
Girdler Construction Div., Chemetron Corp., P. O. Box 174, Louisville 1, Ky.
Holmes & Narver, Inc., 828 S. Figueroa St., Los Angeles 17, Calif.
KAISER ENGINEERS DIV. OF HENRY J. KAISER CO., Oakland 12, Calif. ADV. PG. 33
Keller Products, Inc., 41 Union St., Manchester, N. H.
Kuljian Corp., 1200 N. Broad St., Philadelphia 21, Pa.
Leland Instruments, Ltd., 22-23 Millbank, Westminster, London, S. W. 1, England
LOMA MACHINE MFG. CO., INC., 114 E. 32nd St., New York, N. Y. ADV. PG. 235
MALAKER ASSOCIATES, STEPHEN F., 24 Commerce St., Newark, N. J. ADV. PG. 249
Menlo Research Laboratory, P. O. Box 522, Menlo Park, Calif.
Omega Engineering Co., 70 E. 45th St., New York 17, N. Y.
Parsons Co., Ralph M., 617 W. Seventh St., Los Angeles 17, Calif.
PHYSICS RESEARCH LABORATORIES, P. O. Box 555, Hempstead, N. Y. ADV. PG. 166
Sargent & Lundy, 140 S. Dearborn St., Chicago 3, Ill.
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
Stone & Webster Engineering Corp., 90 Broad St., New York 5, N. Y.
United Engineers & Constructors, Inc., 1401 Arch St., Philadelphia 5, Pa.
VITRO ENGINEERING CO., DIV. OF VITRO CORP. OF AMERICA, 225 Fourth Ave., New York 3, N. Y. ADV. PG. 218
White Engineering Corp., J. G., The, 80 Broad St., New York 4, N. Y.

COMPUTER

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
American-Standard Atomic Energy Div., 1682 Broadway, Redwood City, Calif.
ASTRA, INC., P. O. Box 226, Raleigh, N. C. ADV. PG. 249
Belock Instrument Corp., 111—01 14th Ave., College Point, N. Y.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Blaw-Knox Co., 300 Sixth Ave., N.B., Pittsburgh 22, Pa.
BOOZ-ALLEN APPLIED RESEARCH, INC., 430 Greenbay Rd., Kennilworth, Ill. ADV. PG. 233
Colorado Research Corp., Broomfield Heights, Colo.
Computer Usage Co., Inc., 18 E. 41st St., New York 17, N. Y.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Datamatic Corp., 151 Needham St., Newton Highlands 61, Mass
Dewey & Co., Inc., G. C., 2203 44th St., New York 36, N. Y.
Dian Laboratories, Inc., 611 Broadway, New York 12, N. Y.
Donner Scientific Corp., 888 Galinda St., Concord, Calif.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Electronic Associates, Inc., Long Branch, N. J.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
El-Tronics, Inc., Suburban Station Bldg., Philadelphia, Pa.
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Fluor Corp., Ltd., Research Div., 12000 E. Washington Blvd., Whittier, Calif.
GENERAL ATOMIC DIV. OF GENERAL DYNAMICS CORP., P. O. Box 608, San Diego 12, Calif. ADV. PG. 83
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Radionuclear Co., P. O. Box 407, Milford, Conn.
Hycon-Eastern, Inc., 75 Cambridge Parkway, Cambridge 42, Mass.
Internuclear Co., 7 N. Brentwood Blvd., Clayton 5, Mo.
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Little, Inc., Arthur D., 30 Memorial Drive, Cambridge 42, Mass.
Mid-Century Instrumatic Corp., 611 Broadway, New York 12, N. Y.
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
Ransom Research, P. O. Box 269, San Pedro, Calif.
Reeves Instrument Corp., Roosevelt Field, Garden City, N. Y.
Remington Rand Div. of Sperry Rand Corp., 315 Fourth Ave., New York 10, N. Y.
Servomechanisms, Inc., 12500 Aviation Blvd., Hawthorne, Calif.
Smith Corp., A. O., 3533 N. 27th St., Milwaukee 1, Wis.
Tammen & Denison, Inc., 4751 N. Olcott NB, Chicago 31, Ill.
Technical Research Group, Inc., 2 Aerial Way, Syosset, N. Y.
Thompson Products, Inc., Staff Research & Development New Devices Dept., 7209 Platt Ave., Cleveland 4, Ohio
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

CONSULTING

ACF INDUSTRIES, INC., NUCLEAR PRODUCTS-ERCO DIV., 508 Kennedy St., N.W., Washington 11, D. C. ADV. PG. 43
AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
Admiral Corp., 3800 W. Cortland St., Chicago 47, Ill.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Aeronutronic Systems, Inc. 1234 Air Way, Glendale, Calif.
Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
American Agile Corp., P. O. Box 168, Bedford, Ohio
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
American-Standard Atomic Energy Div., 1682 Broadway, Redwood City, Calif.
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
Arde Associates, 75 Austin St., Newark 2, N. J.
ASSOCIATED NUCLEONICS, INC., 975 Stewart Ave., Garden City, N. Y. ADV. PG. 192
ASTRA, INC., P. O. Box 22, Raleigh, N. C. ADV. PG. 249
Atmu Engineering Co., 173 W. Madison St., Chicago 2, Ill.
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada. ADV. PG. 155
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Bacon Industries, Inc., 192 Pleasant St., Watertown, Mass.
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Becket & Associates, Welton 5657 Wilshire Blvd., Los Angeles 36, Calif.
Blaw-Knox Co., 300 Sixth Ave., N.B., Pittsburgh 22, Pa.
Blodgett & Calley, Inc., 16 Court St., Boston 8, Mass.
BOOZ-ALLEN APPLIED RESEARCH, INC., 430 Greenbay Rd., Kennilworth, Ill. ADV. PG. 233
BUDD CO., NUCLEAR SYSTEMS DIV., 2950 Roberts Ave., Philadelphia 32, Pa. ADV. PG. 187
CANADAIR LTD., P. O. Box 6987, Montreal, Que., Canada ADV. PG. 185
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Chicago Aerial Industries, Inc., 1980 Hawthorne Ave., Melrose Park, Ill.
Computer Usage Co., Inc., 18 E. 41st St., New York, 17, N. Y.
Condenser Service & Engineering Co., Inc., 150 Observer Highway, Hoboken, N. J.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Cubic Corp., 5575 Kearny Villa Rd., San Diego 11, Calif.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Designers for Industry, Inc. 4241 Fulton Parkway, Cleveland 9, Ohio
Devtron Engineering, 1 Winslow St., Redwood City, Calif.

Dewey & Co., Inc., G. C., 202 E. 44th St., New York 36, N. Y.
Ebasco Services, Inc., 2 Rector St., New York 6, N. Y.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Electronic Engineering Co. of California, 1601 E. Chestnut St., Santa Ana, Calif.
Elliott Brothers (London) Ltd., Lewisham Century Works, London S. E. 13, England
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Ferguson Co., Inc., H. K., 11th at Walnut, Cleveland 14, Ohio
Fluor Corp., Ltd., Research Div., 12000 E. Washington Blvd., Whittier, Calif.
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston, Ill. ADV. PG. 229
Garde Mfg. Co., 588 Eddy St., Providence 3, R. I.
GENERAL ATOMIC DIV. OF GENERAL DYNAMICS CORP., P. O. Box 608, San Diego 12, Calif. ADV. PG. 83
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Nuclear Corp., 550 Fifth Ave., New York 26, N. Y.
General Nuclear Engineering Corp., P. O. Box 245, Dunedin, Fla.
General Radiological Ltd., 15—18 Clipstone St., London, W. 1, England
General Radionuclear Co., P. O. Box 407, Milford, Conn.
Gordon Co., Claud S., 619 W. 30th St., Chicago 16, Ill.
Greene & Co., Inc., Arnold, 122 Hampshire St., Cambridge, Mass.
Greer Hydraulics, Inc., International Airport, Jamaica 30, N. Y.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Horizons Inc., 2905 E. 79th St., Cleveland 4, Ohio
Hull Associates, 30 W. Monroe St., Chicago 13, Ill.
Hycon-Eastern, Inc., 75 Cambridge Parkway, Cambridge 42, Mass.
Hydel, Inc., 99 First St., Cambridge 41, Mass.
Industrial Hygiene Associates, 295 Upland Ave., Newton Highlands 61, Mass.
Industrial Nuclear Radiation Consultants, Box 647, New Haven 3, Conn.
Industrial Test Equipment Co., 55 E. 11th St., New York 3, N. Y.
Industrial X-Ray & Research Inc., 880 Second St., Muskegon, Mich.
Internuclear Co., 7 N. Brentwood Blvd., Clayton 5, Mo.
ISOTOPE DEVELOPMENTS LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
ISOTOPES, INC., 123 Woodland Ave., Westwood, N. J. ADV. PG. 148
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
KAISER ENGINEERS DIV. OF HENRY J. KAISER CO., Oakland 12, Calif. ADV. PG. 33
Keller Products, Inc., 41 Union St., Manchester, N. H.
KELLEY & CO., O. G., 98 Taylor St., Dorchester, Mass. ADV. PG. 64, 65
Knapp Mills Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
Land Air, Inc., 2133 Adams Ave., San Leandro, Calif.
LANDAUER, JR., & CO., R. S., 3920 216th St., Matteson, Ill. ADV. PG. 235
Ledoux & Co., 359 Alfred Ave., Teaneck, N. J.
Leland Instruments, Ltd., 22—23 Millbank, Westminster, London, S. W. 1, England
Little, Inc., Arthur D., 30 Memorial Drive, Cambridge 42, Mass.
LOMA MACHINE MFG. CO., INC., 114 E. 32nd St., New York, N. Y. ADV. PG. 235
M & C NUCLEAR, INC., 40 Forest St., Attleboro, Mass. ADV. PG. 177
MAGNETROL, INC., 2115 S. Marshall Blvd., Chicago 23, Ill. ADV. PG. 222
MALAKER ASSOCIATES, STEPHEN F., 24 Commerce St., Newark, N. J. ADV. PG. 249
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass. ADV. PG. 257
Menlo Research Laboratory, P. O. Box 522, Menlo Park, Calif.
Middle West Service Co., 20 N. Wacker Drive, Chicago, Ill.
Moore, Richard L., P. O. Box 24021, Los Angeles 24, Calif.
National Aluminate Corp., 6216 W. 66th Place, Chicago 38, Ill.
National Lead Co., 111 Broadway, New York 6, N. Y.
Neugroschl Associates, Seth, 230 Riverside Drive, New York 25, N. Y.
Neutronics Research Co., 165 Lake St., Waltham, Mass.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Consultants, Inc., 9842 Manchester Rd., St. Louis 19, Mo.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Nuclear Enterprises (G.B.) Ltd., Sighthill, Edinburgh, Scotland
NUCLEAR MATERIALS & EQUIPMENT CORP., 680 Warren Ave., Apollo, Pa. ADV. PG. 163
Nuclear Metals, Inc., Concord, Mass.
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surrey), England
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
Nuclear Service Laboratory, P. O. Box 1885, Knoxville 1, Tenn.
Olin Mathieson Chemical Corp., Nuclear Exel Div., 275 Winchester Ave., New Haven, Conn.
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
Parsons Co., Ralph M., 617 W. Seventh St., Los Angeles 17, Calif.
Philbrick Researches, Inc., George A., 2856 Columbus Ave., Boston 16, Mass.
PHYSICS RESEARCH LABORATORIES, P. O. Box 555, Hempstead, N. Y. ADV. PG. 166
PIONEER SERVICE & ENGINEERING CO., 231 S. LaSalle St., Chicago 4, Ill. ADV. PG. 80
Process & Instruments, 15 Stone Ave., Brooklyn 33, N. Y.
Q. E. D., Inc., 105 W. Adams St., Chicago, Ill.
Quantum, Inc., Lufbery Ave., Wallingford, Conn.
RCA Service Co., Inc., Government Service Dept., Cherry Hill, Camden 8, N. J.
RADIATION APPLICATIONS INC., 370 Lexington Ave., New York 17, N. Y. ADV. PG. 238
Radiation Detection Co., 4047—49 Transport St., Palo Alto, Calif.
Radiation Dynamics Inc., Westbury Industrial Park, Westbury, N. Y.
Radiation Engineering Organization, 306 N. 92nd St., Omaha, Neb.
RADIOCHEMISTRY, INC., 1111 W. St. Catherine St., Louisville 10, Ky. ADV. PG. 242
Ransom Research, P. O. Box 269, San Pedro, Calif.
RELIANCE INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio
Reuter-Stokes Electronic Components, Inc., 2149 Hamilton Ave., Cleveland 14, Ohio
Rosenberg Associates, Paul, 100 Stevens Ave., Mt. Vernon, N. Y.
St. John X-Ray Laboratory, Califon, N. J.
Sargent & Lundy, 140 S. Dearborn St., Chicago 3, Ill
Schultz Co., 503 N. Pine St., Indianapolis 2, Ind.
Snell Inc., Foster D., 29 W. 15th St., New York 11, N Y
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
Stone & Webster Engineering Corp., 90 Broad St., New York 5, N. Y.
Technical Research Group, Inc., 2 Aerial Way, Syosset, N. Y.
TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas ADV. PG. 205
Titeflex, Inc., Hendee St., Springfield 4, Mass.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
U. S. I. Technical Center, Div. of U. S. Industries, Inc., 3901 N.E. 12th Ave., Pompano Beach, Fla.
United States Testing Co., Inc., 1415 Park Ave., Hoboken, N. J.
Videon Electronic Corp., 902 E. Michigan St., Indianapolis 2, Ind.
Vitro Corp. of America, 261 Madison Ave., New York 16, N. Y.
VITRO ENGINEERING CO., DIV. OF VITRO CORP. OF AMERICA, 225 Fourth Ave., New York 3, N. Y. ADV. PG. 218
Volk Radiochemical Co., 5412 N. Clark St., Chicago 40, Ill.
Western Radiation Lab., 1107 W. 24th St., Los Angeles 7, Calif.
White Engineering Corp., J. G., The, 80 Broad St., New York 4, N. Y.

CRITICAL EXPERIMENT

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
ASSOCIATED NUCLEONICS, INC., 975 Stewart Ave., Garden City, N. Y. ADV. PG. 192
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Ebasco Services, Inc., 2 Rector St., New York 6, N. Y.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Garde Mfg. Co., 588 Eddy St., Providence 3, R. I.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Nuclear Engineering Corp., P. O. Box 245, Dunedin, Fla.
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
NUCLEAR DEVELOPMENT CORP. OF AMERICA, 5 New St., White Plains, N. Y. ADV. PG. 16
Quantum, Inc., Lufbery Ave., Wallingford, Conn.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG 7-10

CRITICALITY-HAZARD EVALUATON

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
ASSOCIATED NUCLEONICS, INC., 975 Stewart Ave., Garden City, N. Y. ADV. PG. 192
ASTRA, INC., P. O. Box 226, Raleigh, N. C. ADV. PG. 249
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
CANADAIR LTD., P. O. Box 6987, Montreal, Que., Canada ADV. PG. 185
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Garde Mfg. Co., 588 Eddy St., Providence 3, R. I.
General Nuclear Engineering Corp., P. O. Box 245, Dunedin, Fla.
General Radionuclear Co., P. O. Box 407, Milford, Conn.
Holmes & Narver, Inc., 828 S. Figueroa St., Los Angeles 17, Calif.
Internuclear Co., 7 N. Brentwood Blvd., Clayton 5, Mo.
Little, Inc., Arthur D., 30 Memorial Drive, Cambridge 42, Mass.
MALAKER ASSOCIATES, STEPHEN F., 24 Commerce St., Newark, N. J. ADV. PG. 249
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
Parsons Co., Ralph M., 617 W. Seventh St., Los Angeles 17, Calif.
VITRO ENGINEERING CO., DIV. OF VITRO CORP. OF AMERICA, 225 Fourth Ave, New York 3 N. Y. ADV. PG. 218
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

DECONTAMINATION

American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
Atomic Energy Waste Disposal Service, 5410 Bond St., Oakland 1, Calif.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
General Nuclear Corp., 550 Fifth Ave., New York 26, N. Y.
General Nuclear Engineering Corp., P. O. Box 245, Dunedin, Fla.
GRISCOM-RUSSELL CO., SUB. OF GENERAL PRECISION EQUIPMENT CORP., Massillon, Ohio ADV. PG. 98
Industrial Nuclear Radiation Consultants, Box 647, New Haven 3, Conn.
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58, N. Y. ADV. PG. 227
INTERSTATE INDUSTRIAL UNIFORM RENTAL SERVICE, DECONTAMINATION LAUNDRY DIV., 295 Parker St., Indian Orchard, Mass. ADV. PG. 211
ISOTOPES, INC., 123 Woodland Ave., Westwood, N. J. ADV. PG. 148
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
MALAKER ASSOCIATES, STEPHEN F., 24 Commerce St., Newark, N. J. ADV. PG. 249
Nuclear Engineering Co., Inc., 2600 N. Main St., Walnut Creek, Calif.
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
Radiation Detection Co., 4047—49 Transport St., Palo Alto, Calif.
Radiation Engineering Organization, 306 N. 92nd St., Omaha, Neb.
RADIOCHEMISTRY, INC., 1111 W. St. Catherine St., Louisville 10, Ky. ADV. PG. 242
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157

ENGINEER—CONSTRUCTOR

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AEROJET-GENERAL CORP., ARCHITECT-ENGINEER DIV., 410 N. Citrus Ave., Covina, Calif. ADV. PG. 169
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.

NUCLEAR AND ALLIED PRODUCTS — SERVICES

Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
Associated Engineering & Mfg. Corp., Glen Ridge, N. J.
ASSOCIATED NUCLEONICS, INC., 975 Stewart Ave., Garden City, N. Y. **ADV. PG. 192**
Austin Co., The, 16112 Euclid Ave., Cleveland 12, Ohio
Blaw-Knox Co., 300 Sixth Ave., N.B., Pittsburgh 22, Pa.
Burns & Roe, Inc., 160 West Broadway, New York 13, N. Y.
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Catalytic Construction Co., 1528 Walnut St., Philadelphia 2, Pa.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Dorr-Oliver, Inc., Barry Place, Stamford, Conn.
Ebasco Services, Inc., 2 Rector St., New York 6, N. Y.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Ferguson Co., Inc., H. K., 11th at Walnut, Cleveland 14, Ohio
Fluor Corp., Ltd., 2500 S. Atlantic Blvd., Los Angeles 22, Calif.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
Girdler Construction Div., Chemetron Corp., P. O. Box 174, Louisville 1, Ky.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Holmes & Narver, Inc., 828 S. Figueroa St., Los Angeles 17, Calif.
KAISER ENGINEERS DIV. OF HENRY J. KAISER CO., Oakland 12, Calif. **ADV. PG. 33**
Kullian Corp., 1200 N. Broad St., Philadelphia 21, Pa.
LOMA MACHINE MFG. CO., INC., 114 E. 32nd St., New York, N. Y. **ADV. PG. 235**
MALAKER ASSOCIATES, STEPHEN F., 24 Commerce St., Newark, N. J. **ADV. PG. 249**
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass. **ADV. PG. 257**
NUCLEAR DEVELOPMENT CORP. OF AMERICA, 5 New St., White Plains, N. Y. **ADV. PG. 16**
Nuclear Engineering Ltd., Woolwich Rd., London S. E. 7, England
Parsons Co., Ralph M., 617 W. Seventh St., Los Angeles 17, Calif.
Pittsburgh-Des Moines Steel Co., Pittsburgh 25, Pa.
Ransom Research, P. O. Box 269, San Pedro, Calif.
Schultz Co., 503 N. Pine St., Indianapolis 2, Ind.
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
Stone & Webster Engineering Corp., 90 Broad St., New York 5, N. Y.
Taylor Woodrow Construction Ltd., Ruisup Rd., Southall, Middlesex, Great Britain
United Engineers & Constructors, Inc., 1401 Arch St., Philadelphia 5, Pa.
Videon Electronic Corp., 902 E. Michigan St., Indianapolis 2, Ind.
Vitro Corp. of America, 261 Madison Ave., New York, N. Y.
VITRO ENGINEERING CO., DIV. OF VITRO CORP. OF AMERICA, 225 Fourth Ave., New York 3, N. Y. **ADV. PG. 218**
White Engineering Corp., J. G., The, 80 Broad St., New York 4, N. Y.

FILM BADGE

American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
Atomic Film Badge Corp., 244—02 Jamaica Ave., Bellerose 26, N. Y.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. **ADV. PG. 237**
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. **ADV. PG. 76**
HEALTH PHYSICS SERVICES, INC., 1111 Low St., Baltimore 2, Md. **ADV. PG. 221**
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. **ADV. PG. 158, 229**
LANDAUER, JR., & CO., R. S., 3920 216th St., Matteson, Ill. **ADV. PG. 235**
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. **ADV. PG. 91**
Nuclear Consultants, Inc., 9842 Manchester Rd., St. Louis 19, Mo.
Nuclear Corp. of America, Inc., 400 Park Ave., New Louis 19, Mo.
Nuclear Service Laboratory, P. O. Box 1885, Knoxville 1, Tenn.
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. **ADV. PG. 247**
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. **ADV. PG. 35**
Radiation Detection Co., 4047—49 Transport St., Palo Alto, Calif.
St. John X-Ray Laboratory, Califon, N. J.
Samples Machine Co., A. M., 2908 Tazewell Pike, Knoxville, Tenn.
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. **ADV. PG. 184**
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. **ADV. PG. 151, 152, 157**
Volk Radiochemical Co., 5412 N. Clark St., Chicago 40, Ill.
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.
X-Ray Monitoring Corp., 1947 Broadway, New York 23, N. Y.

HEALTH PHYSICS ORGANIZATION & PROCEDURES

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. **ADV. PG. 169**
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
ASSOCIATED NUCLEONICS, INC., 975 Stewart Ave., Garden City, N. Y. **ADV. PG. 192**
ASTRA, INC., P. O. Box 226, Raleigh, N. C. **ADV. PG. 249**
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. **ADV. PG. 256**
Atomic Energy Waste Disposal Service, 5410 Bond St., Oakland 1, Calif.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. **ADV. PG. 237**
BOOZ-ALLEN APPLIED RESEARCH, INC., 430 Greenbay Rd., Kennilworth, Ill. **ADV. PG. 233**
CANADAIR LTD., P. O. Box 6987, Montreal, Que., Canada **ADV. PG. 185**
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. **ADV. PG. 76**
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. **ADV. PG. 181**
Ebasco Services, Inc., 2 Rector St., New York 6, N. Y.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Radionuclear Co., P. O. Box 407, Milford, Conn.
Industrial Hygiene Associates, 295 Upland Ave., Newton Highlands 61, Mass.
Industrial Nuclear Radiation Consultants, Box 647, New Haven 3, Conn.
Industrial X-Ray & Research, Inc., 880 Second St., Muskegon, Mich.
ISOTOPES, INC., 123 Woodland Ave., Westwood, N. J. **ADV. PG. 148**
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. **ADV. PG. 158, 229**
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. **ADV. PG. 268**
LANDAUER, JR., & CO., R. S., 3920 216th St., Matteson, Ill. **ADV. PG. 235**
Little, Inc., Arthur D., 30 Memorial Drive, Cambridge 42, Mass.
MALAKER ASSOCIATES, STEPHEN F., 24 Commerce St., Newark, N. J. **ADV. PG. 249**
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. **ADV. PG. 146**
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 1091, Pittsburgh 36, Pa. **ADV. PG. 58**
Nuclear Service Laboratory, P. O. Box 1885, Knoxville 1, Tenn.
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. **ADV. PG. 247**
Parsons Co., Ralph M., 617 W. Seventh St., Los Angeles 17, Calif.
PHYSICS RESEARCH LABORATORIES, P. O. Box 555, Hemostead, N. Y. **ADV. PG. 166**
RADIATION APPLICATIONS INC., 370 Lexington Ave., New York 17, N. Y. **ADV. PG. 238**
Radiation Detection Co., 4047—49 Transport St., Palo Alto, Calif.
Radiation Engineering Organization, 306 N. 92nd St., Omaha, Neb.
RADIOCHEMISTRY, INC., 1111 W. St., Catherine St., Louisville 10, Ky. **ADV. PG. 242**
TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas **ADV. PG. 205**
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. **ADV. PG. 151, 152, 157**
VITRO ENGINEERING CO., DIV. OF VITRO CORP. OF AMERICA, 225 Fourth Ave., New York 3, N. Y. **ADV. PG. 218**
Volk Radiochemical Co., 5412 N. Clark St., Chicago 40, Ill.
Western Radiation Lab., 1107 W. 24th St., Los Angeles 7, Calif.

INSURANCE

American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
ASSOCIATED NUCLEONICS, INC., 975 Stewart Ave., Garden City, N. Y. **ADV. PG. 192**
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. **ADV. PG. 237**
March McLennan Co., 231 S. LaSalle St., Chicago 4, Ill.

IRRADIATION—Accelerator

APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. **ADV. PG. 100, 101**
BARNES CO., W. F. & JOHN, 201 S. Water St., Rockford, Ill. **ADV. PG. 224**
BOOZ-ALLEN APPLIED RESEARCH, INC., 430 Greenbay Rd., Kennilworth, Ill. **ADV. PG. 233**
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. **ADV. PG. 181**
Geisler Laboratories, P. O. Box 252, Menlo Park, Calif.
GENERAL ATOMIC DIV. OF GENERAL DYNAMICS CORP., P. O. Box 608, San Diego 12, Calif. **ADV. PG. 83**
HIGH VOLTAGE ENGINEERING CORP., S. Bedford St., Burlington, Mass. **ADV. PG. 189**
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. **ADV. PG. 58**
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Radiation Dynamics Inc., Westbury Industrial Park, Westbury, N. Y.
TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas **ADV. PG. 205**
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England **ADV. PG. 66**
Varian Associates, 611 Hansen Way, Palo Alto, Calif.

IRRADIATION—Isotopic

American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. **ADV. PG. 256**
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada **ADV. PG. 155**
BOOZ-ALLEN APPLED RESEARCH, INC., 430 Greenbay Rd., Kennilworth, Ill. **ADV. PG. 233**
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. **ADV. PG. 181**
Electronic Products Co., 111 E. Third St., Mt. Vernon, N. Y.
Garde Mfg. Co., 588 Eddy St., Providence 3, R. I.
GENERAL ATOMIC DIV. OF GENERAL DYNAMICS CORP., P. O. Box 608, San Diego 12, Calif. **ADV. PG. 83**
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. **ADV. PG. 37-39**
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. **ADV. PG. 158, 229**
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. **ADV. PG. 58**
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
RADIATION APPLICATIONS INC., 370 Lexington Ave., New York 17, N. Y. **ADV. PG. 238**

IRRADIATION—Reactor

AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
Admiral Corp., 3800 W. Cortland St., Chicago 47, Ill.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. **ADV. PG. 169**
American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
ATOMIC ENERGY OF CANADA, LTD., COMMERIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada. **ADV. PG. 155**
BOOZ-ALLEN APPLIED RESEARCH, INC., 430 Greenbay Rd., Kennilworth, Ill. **ADV. PG. 233**
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. **ADV. PG. 76**
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. **ADV. PG. 149**
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. **ADV. PG. 181**
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. **ADV. PG. 37-39**
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. **ADV. PG. 58**
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.

LAUNDRY

CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. **ADV. PG. 76**
Industrial Over-All Laundry, 1604 Thomaston Ave., Waterbury 14, Conn.
INTERSTATE INDUSTRIAL UNIFORM RENTAL SERVICE, DECONTAMINATION LAUNDRY DIV., 259 Parker St., Indian Orchard, Mass. **ADV. PG. 211**
Nuclear Engineering Co., Inc., 2600 N. Main St., Walnut Creek, Calif.
NUCLEAR LAUNDRY SERVICE, INC., P. O. Box 4145, Waterbury 14, Conn. **ADV. PG. 251**

LEAK TESTING

American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. **ADV. PG. 256**
ATOM RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. **ADV. PG. 237**
BONNEY-FLOYD CO., THE, 611 Marion Rd., Columbus 7, Ohio **ADV. PG. 62**
CANADAIR LTD., P. O. Box 6087, Montreal, Que., Canada **ADV. PG. 185**
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.

CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany
Industrial Nuclear Radiation Consultants, Box 647, New Haven 3, Conn.
Instruments, Inc., 122 N. Madison, P. O. Box 556, Tulsa, Okla.
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
Kinetics Corp., 2 Churchill Rd., Hingham, Mass.
MAGNAFLUX CORP., 7346 W. Lawrence Ave., Chicago 31, Ill. ADV. PG. 239
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
RADIATION APPLICATIONS INC., 370 Lexington Ave., New York 17, N. Y. ADV. PG. 238
Radiation Detection Co., 4047—49 Transport St., Palo Alto, Calif.
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Titeflex, Inc., Hendee St., Springfield 4, Mass.

METALLURGICAL

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
ALCO PRODUCTS, INC., Schenectady 5, N. Y ADV. PG. 179
Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Cast Iron Pipe Co., Special Products Div., 2930 N. 16th St., Birmingham, Ala.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36, N. Y.
American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
American-Standard Atomic Energy Div., 1682 Broadway, Redwood City, Calif.
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn 7, N. Y.
Bishop & Co., J., Platinum Works, Malvern, Pa.
BONNEY-FLOYD CO., THE, 611 Marion Rd., Columbus 7, Ohio ADV. PG. 62
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
Chromalloy Corp., 450 Tarrytown Rd., White Plains, N. Y.
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Driver Co., Wilbur B., 1875 McCarter Highway, Newark 4, N. J.
Ebasco Services, Inc., 2 Rector St., New York 6, N. Y.
ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave., Portland 10, Ore. ADV. PG. 175
Electro Metallurgical Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Fluor Corp., Ltd., Research Div., 12000 E. Washington Blvd., Whittier, Calif.
Garde Mfg. Co., 588 Eddy St., Providence 3, R. I.
GENERAL ATOMIC DIV. OF GENERAL DYNAMICS CORP., P. O. Box 608, San Diego 12, Calif. ADV. PG. 83
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
Gordon Co., Claud S., 619 W. 30th St., Chicago 16, Ill.
Greene & Co., Inc., Arnold, 122 Hampshire St., Cambridge, Mass.
Horizons Inc., 2905 E. 79th St., Cleveland 4, Ohio
Kinetics Corp., 2 Churchill Rd., Hingham, Mass.
Knapp Mills, Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
Ledoux & Co., 359 Alfred Ave., Teaneck, N. J.
Lindberg Engineering Co., 2450 W. Hubbard St., Chicago 12, Ill.
Little, Inc., Arthur D., 30 Memorial Drive, Cambridge 42, Mass.
LOMA MACHINE MFG. CO., INC., 114 E. 32nd St., New York N. Y. ADV. PG. 235
M & C NUCLEAR, INC., 40 Forest St., Attleboro, Mass. ADV. PG. 177
Mallory & Co., Inc., P. R., 58 S. Gray St., Indianapolis 6, Ind.
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
Metals Research & Development, Inc., Tunkhannock Ave., Exeter, Pa.
National Aluminate Corp., 6216 W. 66th Place, Chicago 38, Ill.
National Lead Co., 111 Broadway, New York 6, N. Y.
National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.
NUCLEAR DEVELOPMENT CORP. OF AMERICA, 5 New St., White Plains, N. Y. ADV. PG. 16
NUCLEAR MATERIALS & EQUIPMENT CORP., 680 Warren Ave., Apollo, Pa. ADV. PG. 163
Nuclear Metals, Inc., Concord, Mass.
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
Oregon Metallurgical Corp., P. O. Box 484, Albany, Ore.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
Rem-Cru Titanium, Inc., Midland, Pa.
Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio
Sintercast Corp. of America, 134 Woodworth Ave., Yonkers, N. Y.
SUPERIOR TUBE CO., Box 191, Norristown, Pa. ADV. PG. 71
SYLVANIA-CORNING NUCLEAR CORP., 208—20 Willetts Point Blvd., Bayside, N. Y. ADV. PG. 141
Technical Research Group, Inc., 2 Aerial Way, Syosset, N. Y.
Texas Research Foundation, Renner, Texas
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
U. S. Testing Co., Inc., 1415 Park Ave., Hoboken, N. J.
Vitro Corp. of America, 261 Madison Ave., New York 16, N. Y.
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.

MICROFILMING

COOPER-TRENT BLUEPRINT & MICROFILM CORP., 2701 Wilson Blvd., Arlington 1, Va. ADV. PG. 228

MONITORING

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
ASSOCIATED NUCLEONICS INC., 975 Stewart Ave., Garden City, N. Y. ADV. PG 192
ASTRA INC., P. O. Box 226, Raleigh, N. C. ADV. PG. 249
Atomic Energy Waste Disposal Service, 5410 Bond St., Oakland 1, Calif.
Atomic Film Badge Corp., 244—02 Jamaica Ave., Bellerose 26, N. Y.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Avtron Mfg., Inc., 10409 Meech St., Cleveland, Ohio
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Ebasco Services, Inc., 2 Rector St., New York 6, N. Y.
General Radionuclear Co., P. O. Box 407, Milford, Conn.
Industrial Hygiene Associates, 295 Upland Ave., Newton Highlands 61, Mass.
Industrial Nuclear Radiation Consultants, Box 647, New Haven 3, Conn.
Industrial X-Ray & Research, Inc., 880 Second St., Muskegon, Mich.
Instruments, Inc., 122 N. Madison, P. O. Box 556, Tulsa, Okla.
ISOTOPE DEVELOPMENTS, LTD., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
ISOTOPES, INC., 123 Woodland Ave., Westwood, N. J. ADV. PG. 148
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
LANDAUER, JR. & CO., R. S., 3920 216th St., Matteson, Ill. ADV. PG. 235
MALAKER ASSOCIATES, STEPHEN F., 24 Commerce St., Newark, N. J. ADV. PG. 249
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave, Indianapolis 18, Ind. ADV. PG. 146
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
Nuclear Service Laboratory, P. O. Box 1885, Knoxville 1, Tenn.
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Radiation Detection Co., 4047—49 Transport St., Palo Alto, Calif.
Radiation Engineering Organization, 306 N. 92nd St., Omaha, Neb.
RIGGS NUCLEONICS CORP., 717 N. Victory Blvd., Burbank, Calif. ADV. PG. 267
St. John X-Ray Laboratory, Califon, N. J.
Technical Research Group, Inc., 2 Aerial Way, Syosset, N. Y.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Western Radiation Lab., 1107 W. 24th St., Los Angeles 7, Calif.

NUCLEAR MATERIAL ACCOUNTABILITY

American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
ASSOCIATED NUCLEONICS, INC., 975 Stewart Ave., Garden City, N. Y. ADV. PG. 192
ASTRA, INC., P. O. Box 226, Raleigh, N. C. ADV. PG. 249
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BOOZ-ALLEN APPLIED RESEARCH, INC., 430 Greenbay Rd., Kennilworth, Ill. ADV. PG. 233
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
General Radionuclear Co., P. O. Box 407, Milford, Conn.
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
Ledoux & Co., 359 Alfred Ave., Teaneck, N. J.
MALAKER ASSOCIATES, STEPHEN F., 24 Commerce St., Newark, N. J. ADV. PG. 249
Nuclear Consultants, Inc., 9842 Manchester Rd., St. Louis 19, Mo.
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
Nuclear Metals, Inc., Concord, Mass.
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
Quantum, Inc., Lufbery Ave., Wallingford, Conn.

RADIOGRAPHY

American Cast Iron Pipe Co., Special Products Div., 2930 N. 16th St., Birmingham, Ala.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada ADV. PG. 155
Balteau Electric Corp., New & Meadow Sts., Stamford, Conn.
BONNEY-FLOYD CO., THE, 611 Marion Rd., Columbus 7, Ohio ADV. PG. 62
BOOZ-ALLEN APPLIED RESEARCH, INC., 430 Greenbay Rd., Kennilworth, Ill. ADV. PG. 233
BUDD CO., NUCLEAR SYSTEMS DIV., 2950 Roberts Ave., Philadelphia 32, Pa. ADV. PG. 187
Canadian Radium & Uranium Corp., 630 Fifth Ave., New York 20, N. Y.
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Falk & Co., Ltd., M., Emefco House, Bell St., Reigate (Surrey), England
Gamma Industrie, 52, Rue de Dunkerque, Paris, France
General Radiological Ltd., 15—18 Clipstone St., London, W. 1, England
Greene & Co., Inc., Arnold, 122 Hampshire st., Cambridge, Mass.
Industrial Nuclear Radiation Consultants, Box 647, New Haven 3, Conn.
Industrial X-Ray & Research, Inc., 880 Second St., Muskegon, Mich.
Ledoux & Co., 359 Alfred Ave., Teaneck, N. J.
MALAKER ASSOCIATES, STEPHEN F., 24 Commerce St., Newark, N. J. ADV. PG. 249
Nuclear Consultants, Inc., 9842 Manchester Rd., St. Louis 19, Mo.
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
Oregon Metallurgical Corp., P. O. Box 484, Albany, Ore.
Radiation Engineering Organization, 306 N. 92nd St., Omaha, Neb.
RADIUM CHEMICAL CO., 161 E. 42nd St., New York 17, N. Y. ADV. PG. 241
St. John X-Ray Laboratory, Califon, N. J.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass., ADV. PG. 151, 152, 157
Western Radiation Lab., 1107 W. 24th St., Los Angeles 7, Calif.

RADIOISOTOPE ANALYSIS

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.

NUCLEAR AND ALLIED PRODUCTS — SERVICES

ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
BOOZ-ALLEN APPLIED RESEARCH, INC., 430 Greenbay Rd., Kennilworth, Ill. ADV. PG. 233
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
CONTROLS FOR RADIATION, INC. 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
CRYSTALS, INC., 123 Woodland Ave., Dept. N.B.G., Westwood, N. J. ADV. PG. 228
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston, Ill. ADV. PG. 229
GENERAL ATOMIC DIV. OF GENERAL DYNAMICS CORP., P. O. Box 608, San Diego 12, Calif. ADV. PG. 83
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
Industrial Nuclear Radiation Consultants, Box 647, New Haven 3, Conn.
ISOTOPES, INC., 123 Woodland Ave., Westwood, N. J. ADV. PG. 148
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif., ADV. PG. 158, 229
M S A Research Corp., Callery, Pa.
MALAKER ASSOCIATES, STEPHEN F., 24 Commerce St., Newark, N. J. ADV. PG. 249
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NEW ENGLAND NUCLEAR CORP., 575 Albany St., Boston, Mass. ADV. PG. 233
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
RADIATION APPLICATIONS INC., 370 Lexington Ave., New York 17, N. Y. ADV. PG. 238
Radiation Engineering Organization, 306 N. 92nd St., Omaha, Neb.
RADIOCHEMISTRY, INC., 1111 W. St. Catherine St., Louisville 10, Ky. ADV. PG. 242
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
United States Testing Co., Inc., 1415 Park Ave., Hoboken, N. J.
Volk Radiochemical Co., 5142 N. Clark St., Chicago 40, Ill.

REACTOR DESIGN

ACF INDUSTRIES, INC., NUCLEAR PRODUCTS-ERCO DIV., 508 Kennedy St., N.W., Washington 11, D. C. ADV. PG. 43
AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
American-Standard Atomic Energy Div., 682 Broadway, Redwood City, Calif.
Arde Associates, 75 Austin St., Newark 2, N. J.
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
ASSOCIATED NUCLEONICS, INC., 975 Stewart Ave., Garden City, N. Y. ADV. PG. 192
ASTRA, INC., P. O. Box 226, Raleigh, N. C. ADV. PG. 249
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
BOOZ-ALLEN APPLIED RESEARCH, INC., 430 Greenbay Rd., Kennilworth, Ill. ADV. PG. 233
CANADAIR LTD., P. O. Box 6087, Montreal, Que., Canada ADV. PG. 185
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Computer Usage Co., Inc., 18 E. 41st St., New York 17, N. Y.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Dewey & Co., Inc., G. C., 202 E. 44th St., New York 36, N. Y.
Ebasco Services, Inc., 2 Rector St., New York 6, N. Y.
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
GENERAL ATOMIC DIV. OF GENERAL DYNAMICS CORP., P. O. Box 608, San Diego 12, Calif. ADV. PG. 83
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Nuclear Engineering Corp., P. O. Box 245, Dunedin, Fla.
Internuclear Co., 7 N. Brentwood Blvd., Clayton 5, Mo.
KAISER ENGINEERS DIV. OF HENRY J. KAISER CO., Oakland 12, Calif. ADV. PG. 33
Little, Inc., Arthur D., 30 Memorial Drive, Cambridge 42, Mass.
MALAKER ASSOCIATES, STEPHEN F., 24 Commerce St., Newark, N. J. ADV. PG. 249
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
New York Shipbuilding Corp., Camden, N. J.
NUCLEAR DEVELOPMENT CORP. OF AMERICA, 5 New St., White Plains, N. Y. ADV. PG. 16
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Patterson Moos Div., Universal Winding Co., 9—28 Van Wyck Expresssway, Jamaica 18, N. Y.
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
Reactor Motors Div., Thiokol Chemical Corp, Denville, N. J.
SUPERIOR TUBE CO., Box 191, Norristown, Pa. ADV. PG. 71
Technical Research Group, Inc., 2 Aerial Way, Syosset, N. Y.
VITRO ENGINEERING CO., DIV. OF VITRO CORP. OF AMERICA, 225 Fourth Ave., New York 3, N. Y. ADV. PG. 218
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. AD. PG. 7—10

REACTOR ECONOMICS

ACF INDUSTRIES, INC., NUCLEAR PRODUCTS-ERCO DIV., 508 Kennedy St., N.W., Washington 11, D. C. ADV. PG. 43
AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
American-Standard Atomic Energy Div., 1682 Broadway, Redwood City, Calif.
ASSOCIATED NUCLEONICS, INC., 975 Stewart Ave., Garden City, N. Y. ADV. PG. 192
ASTRA, INC., P. O. Box 226, Raleigh, N. C. ADV. PG 249
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
BOOZ-ALLEN APPLIED RESEARCH, INC., 430 Greenbay Rd., Kennilworth, Ill. ADV. PG. 233
CANADAIR LTD., P. O. Box 6987, Montreal, Que., Canada ADV. PG. 185
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Ebasco Services, Inc., 2 Rector St., New York 6, N. Y.
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
Fluor Corp., Ltd., Research Div., 12000 E. Washington Blvd., Whittier, Calif.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Nuclear Engineering Corp., P. O. Box 245, Dunedin, Fla.
Internuclear Co., 7 N. Brentwood Blvd., Clayton 5, Mo.
KAISER ENGINEERS DIV. OF HENRY J. KAISER CO., Oakland 12, Calif. ADV. PG. 33
Little, Inc., Arthur D., 30 Memorial Drive, Cambridge 42, Mass.
MALAKER ASSOCIATES, STEPHEN F., 24 Commerce St., Newark, N. J. ADV. PG. 249
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
Parsons Co., Ralph M., 761 W. Seventh St., Los Angeles 17, Calif.
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Quantum, Inc., Lufbery Ave., Wallingford, Conn.
Technical Research Group, Inc., 2 Aerial Way, Syosset, N. Y.
VITRO ENGINEERING CO., DIV. OF VITRO CORP. OF AMERICA, 225 Fourth Ave., New York 3, N. Y. ADV. PG. 218

REACTOR-HAZARD EVALUATION

ACF INDUSTRIES, INC., NUCLEAR PRODUCTS-ERCO DIV., 508 Kennedy St., N.W., Washington 11, D.C. ADV. PG. 43
AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
American Nuclear Science Corp., 1 Broadway, New York 6, N. Y.
ASSOCIATED NUCLEONICS, INC., 975 Stewart Ave., Garden City, N. Y. ADV. PG. 192
ASTRA, INC., P. O. Box 226, Raleigh, N. C. ADV. PG. 249
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
BOOZ-ALLEN APPLIED RESEARCH, INC., 430 Greenbay Rd., Kennilworth, Ill. ADV. PG. 233
CANADAIR LTD., P. O. Box 6987, Montreal, Que., Canada ADV. PG. 185
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Ebasco Services, Inc., 2 Rector St., New York 6, N. Y.
General Electric Co. Ltd. of England Magnet House, Kingsway, London, W. C. 2
General Nuclear Engineering Corp., P. O. Box 245, Dunedin, Fla.
General Radionuclear Co., P. O. Box 407, Milford, Conn.
Holmes & Narver, Inc., 828 S. Figueroa St., Los Angeles 17, Calif.
Internuclear Co., 7 N. Brentwood Blvd., Clayton 5, Mo.
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
KAISER ENGINEERS DIV. OF HENRY J. KAISER CO., Oakland 12, Calif. ADV. PG. 33
Little, Inc., Arthur D., 30 Memorial Drive, Cambridge 42, Mass.
MALAKER ASSOCIATES, STEPHEN F., 24 Commerce St., Newark, N. J. ADV. PG. 249
Martin Co., The, Nuclear Div. Mail J340, Baltimore 3, Md.
Nuclear Consultants, Inc., 9842 Manchester Rd., St. Louis 19, Mo.
NUCLEAR DEVELOPMENT CORP. OF AMERICA, 5 New St., White Plains, N. Y. ADV. PG. 16
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
Parsons Co., Ralph M., 617 W. Seventh St., Los Angeles 17, Calif.
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Quantum, Inc., Lufbery Ave., Wallingford, Conn.
Sargent & Lundy, 140 S. Dearborn St., Chicago, Ill
Technical Research Group, Inc., 2 Aerial Way, Syosset, N. Y.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham, 54, Mass. ADV. PG. 151, 152, 157
VITRO ENGINEERING CO., DIV. OF VITRO CORP. OF AMERICA, 225 Fourth Ave., New York 3, N. Y. ADV. PG. 218

SAMPLING—Air & Water

American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
ASSOCIATED NUCLEONICS, INC., 975 Stewart Ave., Garden City, N. Y. ADV. PG 192
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
CONTROLS FOR RADIATION, INC., 130 Alewife Books Parkway, Cambridge 40, Pa. ADV. PG. 76
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Fluor Corp., Ltd., Research Div., 12000 E. Washington Blvd., Whittier, Calif.
GELMAN INSTRUMENT CO., Chelsea, Mich. ADV. PG. 239
Industrial X-Ray & Research, Inc., 880 Second St., Muskegon, Mich.
ISOTOPES, INC., 123 Woodland Ave., Westwood, N. J. ADV. PG. 148
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
Millipore Filter Corp., Bedford, Mass.
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
NUCLEONIC CORP. OF AMERICA, 194 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Phoenix Precision Instrument Co., 3803—05 N. Fifth St., Philadelphia Pa.
Radiation Detection Co., 4047—49 Transport St., Palo Alto, Calif.
RADIOCHEMISTRY, INC., 1111 W. St. Catherine St., Louisville 10, Ky. ADV. PG. 242
STAPLEX CO., THE, AIR SAMPLER DIV., 781 Fifth Ave., Brooklyn 32, N. Y. ADV. PG. 234
TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas ADV. PG. 205
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
U. S. Testing Co., Inc., 1415 Park Ave., Hoboken, N. J.

SITE SELECTION

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AMF Atomics, A Div. of American Machine & Foundry Co., 26 Madison Ave., New York 16, N. Y.
Aero Service Corp., 210 E. Courtland, Philadelphia 20, Pa.
ASSOCIATED NUCLEONICS INC., 975 Stewart Ave., Garden City, N. Y. ADV. PG. 192
Becket & Associates, Welton, 5657 Wilshire Blvd., Los Angeles 36, Calif.
BOOZ-ALLEN APPLIED RESEARCH, INC., 430 Greenbay Rd., Kennilworth, Ill. ADV. PG. 233
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Ebasco Services, Inc., 2 Rector St., New York 6, N. Y.
Ferguson Co., Inc., H. K., 11th at Walnut, Cleveland 14, Ohio
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Nuclear Engineering Corp., P. O. Box 245, Dunedin, Fla.
General Radionuclear Co., P. O. Box 407, Milford, Conn.
Holmes & Narver, Inc., 828 S. Figueroa St., Los Angeles 17, Calif.
Internuclear Co., 7 N. Brentwood Blvd., Clayton 5, Mo.
KAISER ENGINEERS, DIV. OF HENRY J. KAISER Co., Oakland 12, Calif. ADV. PG. 33
Little, Inc., Arthur D., 30 Memorial Drive, Cambridge 42, Mass.
MALAKER ASSOCIATES, STEPHEN F., 24 Commerce St., Newark, N. J. ADV. PG. 249
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
Parsons Co., Ralph M., 617 W. Seventh St., Los Angeles 17, Calif.
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Radiation Detection Co., 4047—49 Transport St., Palo Alto, Calif.
Sargent & Lundy, 140 S. Dearborn St., Chicago, Ill.
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 153
VITRO ENGINEERING CO., DIV. OF VITRO CORP. OF AMERICA, 225 Fourth Ave., New York 3, N. Y. ADV. PG. 218

SPECTROGRAPHIC ANALYSIS

American Cast Iron Pipe Co., Special Products Div., 2930 N. 16th St., Birmingham, Ala.
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
BOOZ-ALLEN APPLIED RESEARCH, INC., 430 Greenbay Rd., Kennilworth, Ill. ADV. PG. 233
Combustion Engineering Inc., 200 Madison Ave., New York 16, N. Y.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave., Portland 10, Ore. ADV. PG. 175
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
Industrial Nuclear Radiation Consultants, Box 647, New Haven 3, Conn.
Ledoux & Co., 359 Alfred Ave., Teaneck, N. J.
National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEAR MATERIALS & EQUIPMENT CORP., 680 Warren Ave., Apollo, Pa. ADV. PG. 163
NUCLIDE ANALYSIS ASSOCIATES, P. O. Box 752, State College, Pa. ADV. PG. 257
Oregon Metallurgical Corp., P. O. Box 484, Albany, Ore.
Phoenix Precision Instrument Co., 3803-05 N. Fifth St., Philadelphia, Pa.
RADIOCHEMISTRY, INC., 1111 W. St. Catherine St., Louisville 10, Ky. ADV. PG. 242
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
U. S. Testing Co., Inc., 1415 Park Ave., Hoboken, N. J.

TESTING—Environmental

AMF Atomics, A Div. of American Machine & Foundry Co., 26 Madison Ave., New York 16, N. Y.
Abrams Instrument Corp., 600—620 E. Shiawassee St., Lansing, Mich.
Admiral Corp., 3800 W. Cortland St., Chicago 47, Ill.
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Air Marine Motors, Inc., 369 Bay View Ave., Amityville, N. Y.
Air Reduction Sales Co., Div. of Air Reduction Co., Inc., 150 E. 42nd St., New York 17, N. Y.
Aireco, Inc., 2323 Second Ave., Carmen, Schenectady, N. Y.
American Electronic Laboratories, Inc., 121 N. 7th St., Philadelphia 6, Pa.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ASSOCIATED NUCLEONICS, INC., 975 Stewart Ave., Garden City, N. Y. ADV. PG. 192
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
Babcock & Wilcox Ltd., Babcock House, 209 Eustron Rd., London N. W. 1, England
Belock Instrument Corp., 111—01 14th Ave., College Point, N. Y.
Canadian Applied Research, Ltd., 1500 O'Connor Drive, Toronto 16, Ontario, Canada
Combustion Engineering Inc., 200 Madison Ave., New York 16, N. Y.
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Dale Products, Inc., Columbus, Neb.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Electronic Communications, Inc., 1501 72nd St., N., St. Petersburg, Fla.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
Hunter-Bristol Div., Thiokol Chemical Corp., Bristol, Pa.
Industrial Nuclear Radiation Consultants, Box 647, New Haven 3, Conn.
ISOTOPES, INC., 123 Woodland Ave., Westwood, N. J. ADV. PG. 148
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
Land Air, Inc., 2133 Adams Ave., San Leandro, Calif.
M & C NUCLEAR, INC., 40 Forest St., Attleboro, Mass. ADV. PG. 177
M S A Research Corp., Callery, Pa.
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N. Y.
MALLORY-SHARON METALS CORP., Niles, Ohio ADV. PG. 5
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
National Research Corp., 70 Memorial Drive, Cambridge 39, Mass.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 1, N. Y.
NUCLEAR DEVELOPMENT CORP. OF AMERICA, 5 New St., White Plains, N. Y. ADV. PG. 16
NUCLEAR MATERIALS & EQUIPMENT CORP., 680 Warren Ave., Apollo, Pa. ADV. PG. 163
Nuclear Metals, Inc., Concord, Mass.
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
Omega Engineering Co., 70 E. 45th St., New York 17, N. Y.
On Mark Couplings, 4440 York Blvd., Los Angeles 41, Calif.
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Radiation Dection Co., 4047-49 Transport St., Palo Alto, Calif.
Statham Instruments, Inc., 12401 W. Olympic Blvd., Los Angeles 64, Calif.
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Tenney Engineering, Inc., 1090 Springfield Rd., Union, N. J.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Trop-Artic, Inc., 3000 S. Hackley St., Muncie, Ind.
UNITED SHOE MACHINERY CORP., ATOMIC POWER DEPT., RESEARCH DIV., Balch St., Beverly, Mass. ADV. PG. 78, 79
U. S. Testing Co., Inc., 1415 Park Ave., Hoboken, N. J.

TESTING—Nondestructive

See also RADIOGRAPHIC EQUIPMENT

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Alcar Instruments, Inc., 17 Industrial Ave., Little Ferry, N. J.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
American Cast Iron Pipe Co., Special Products Div., 2930 N. 16th St., Birmingham, Ala.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
Applied Research Labs., Inc., P. O. Box 1710, Glendale 5, Calif.
Arde Associates, 75 Austin St., Newark 2, N. J.
ASSOCIATED NUCLEONICS, INC., 975 Stewart Ave., Garden City, N. Y. ADV. PG. 192
Babcock & Wilcox Ltd., Babcock House, 209 Eustron Rd., London N. W. 1, England
Balteau Electric Corp., New & Meadow Sts., Stamford, Conn.
BENDIX AVIATION CORP., CINCINNATI DIV., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
BONNEY-FLOYD CO., THE, 611 Marion Rd., Columbus 7, Ohio ADV. PG. 62
Branson Instruments, Inc., 37 Brown House Rd., Stamford, Conn.
BUDD CO., NUCLEAR SYSTEMS DIV., 2950 Roberts Ave., Philadelphia 32, Pa. ADV. PG. 187
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave., Portland 10, Ore. ADV. PG. 175
Falk & Co., Ltd., M., Emefco House, Bell St., Reigate (Surrey), England
Garde Mfg. Co., 588 Eddy St., Providence 3, R. I.
Greene & Co., Inc., Arnold, 122 Hampshire St., Cambridge, Mass.
Greer Hydraulics, Inc., International Airport, Jamaica 30, N. Y.
Industrial Nuclear Radiation Consultants, Box 647, New Haven 3, Conn.
Industrial X-Ray & Research, Inc., 880 Second St., Muskegon, Mich.
Knapp Mills, Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
M & C NUCLEAR, INC., 40 Forest St., Attleboro, Mass. ADV. PG. 177
M S A Research Corp., Callery, Pa.
MAGNAFLUX CORP., 7346 W. Lawrence Ave., Chicago 31, Ill. ADV. PG. 239
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
Nuclear Consultants, Inc., 9842 Manchester Rd., St. Louis 19, Mo
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
Nuclear Metals, Inc., Concord, Mass.
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
On Mark Couplings, 4440 York Blvd., Los Angeles 41, Calif.
Oregon Metallurgical Corp., P. O Box 484, Albany, Ore.
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
St. John X-Ray Laboratory, Califon, N. J.
Schutte & Koerting Co., Cornwell Heights, Bucks County, Pa.
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo
Texas Research Foundation, Renner, Texas
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
U. S. Testing Co., Inc., 1415 Park Ave., Hoboken, N. J.

TRAFFIC & TRANSPORTATION

American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
Ebasco Services, Inc., 2 Rector St., New York 6, N. Y.
Ellen, M W., 7209 W. Adams St., Forest Park, Ill.
Ferguson Co., H. K., 11th at Walnut, Cleveland 14, Ohio

URANIUM ANALYSIS

American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Combustion Engineering, Inc., 200 Madison Ave., New York 16 N. Y.
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
CRYSTALS, INC., 123 Woodland Ave., Dept. N.B.G., Westwood, N. J. ADV. PG. 228
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
Industrial Nuclear Radiation Consultants, Box 647, New Haven 3, Conn.
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
Ledoux & Co., 359 Alfred Ave., Teaneck, N. J.
M & C NUCLEAR, INC., 40 Forest St., Attleboro, Mass. ADV. PG. 177
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
NUCLEAR MATERIALS & EQUIPMENT CORP., 680 Warren Ave., Apollo, Pa. ADV. PG. 163
Nuclear Metals, Inc., Concord, Mass.
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG 58

NUCLIDE ANALYSIS ASSOCIATES, P. O. Box 752, State College, Pa. ADV. PG. 257
Oregon Metallurgical Corp., P. O. Box 484, Albany, Ore.
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
Radiation Detection Co., 4047-49 Transport St., Palo Alto, Calif.
RADIOCHEMISTRY, INC., 1111 W. St Catherine St., Louisville 10, Ky. ADV. PG. 242
TEXAS NUCLEAR CORP., Box 9267, Allandale Station Austin 17, Texas ADV. PG. 205
Texas Research Foundation, Renner, Texas
TRACERLAB INC., 1016 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
U. S. Testing Co., Inc., 1415 Park Ave., Hoboken, N. J.

URINALYSIS

ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
Industrial Nuclear Radiation Consultants, Box 647, New Haven 3, Conn.
ISOTOPES, INC., 123 Woodland Ave., Westwood, N. J. ADV. PG. 148
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
NEW ENGLAND NUCLEAR CORP., 575 Albany St., Boston, Mass. ADV. PG. 233
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
RADIATION APPLICATIONS INC., 370 Lexington Ave., New York 17, N. Y. ADV. PG. 238
Radiation Detection Co., 4047—49 Transport St., Palo Alto, Calif.
RADIOCHEMISTRY, INC., 1111 W. St. Catherine St., Louisville 10, Ky. ADV. PG. 242
TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas ADV. PG. 205
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157

WASTE DISPOSAL—Radioactive

American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
ASSOCIATED NUCLEONICS, INC., 975 Stewart Ave., Garden City, N. Y. ADV. PG. 192
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
Atomic Energy Waste Disposal Service, 5410 Bond St., Oakland 1, Calif.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
CONTROLS FOR RADIATION, INC., 130 Alewife Brook Parkway, Cambridge 40, Mass. ADV. PG. 76
CROSSROADS MARINE DISPOSAL CORP., 267 Wharf, Boston, Mass ADV. PG. 245
Fluor Corp., Ltd., Research Div., 12000 E. Washington Blvd., Whittier, Calif.
General Nuclear Engineering Corp., P. O. Box 245, Dunedin, Fla.
GRISCOM-RUSSELL CO., SUB. OF GENERAL PRECISION EQUIPMENT CORP., Massillon, Ohio ADV. PG. 98
Holmes & Narver, Inc., 828 S. Figueroa St., Los Angeles 17, Calif.
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
New England Tank Cleaning Co., 135 First St., Cambridge 41, Mass.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Nuclear Engineering Co., Inc., 2600 N. Main St., Walnut Creek, Calif.
NUCLEAR SCIENCE & ENGINEERING CORP., P. O. Box 10901, Pittsburgh 36, Pa. ADV. PG. 58
PINTSCH RAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
RADIOLOGICAL SERVICE CO., 244—02 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 225
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Sargent & Lundy, 140 S. Dearborn St., Chicago, Ill.
Walker Trucking Co., P. O. Box 2, New Britain, Conn.

WELDING—Nuclear

Christiansen Co., C. B., 164 Pennington St., Newark, N. J.
Technicraft Labs., Inc., Thomaston-Waterbury Rd., Thomaston, Conn.

SERVOMECHANISMS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Airborne Accessories Corp., 1414 Chestnut Ave., Hillside 5, N. J.
Airpax Products Co., Seminole Div., Fort Lauderdale, Fla.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
BALL BROTHERS RESEARCH CORP., Industrial Park, Boulder, Colo. ADV. PG. 74
Belock Instrument Corp., 111-01 14th Ave., College Point, N. Y.
Bowmar Instrument Corp., 8000 Bluffton Rd., Fort Wayne, Ind.
Canadian Applied Research, Ltd., 1500 O'Connor Drive, Toronto 16, Ontario, Canada
Chicago Aerial Industries, Inc., 1980 Hawthorne Ave., Melrose Park, Ill.
Clifton Precision Products Co., Broadway & Marple Ave., Clifton Heights, Pa.
Collins Corp., G. L., 2820 Hullett St., Long Beach, Calif.
Consolidated Controls Corp., Durant Ave., Bethel, Conn.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Daimo Victor Co., Div. of Textron, Inc., 1515 Industrial Way, Belmont, Calif.
Daystrom Transicoil Corp., Worcester, Pa.
Detroit Controls Div. of American-Standard, 100 Morse St., Norwood, Mass.
Eastern Industries, Inc., 100 Skiff St., Hamden, Conn.
ECLIPSE-PIONEER DIV., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Edison Industries, Thomas A., Instrument Div., West Orange, N. J.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Electric Tachometer Corp., 68th & Upland Sts., Philadelphia 42, Pa.
Electronic Associates, Inc., Long Branch, N. J.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
FORD INSTRUMENT CO., DIV. OF SPERRY-RAND CORP., 31-10 Thomson Ave., Long Island City, N. Y. ADV. PG. 183
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Nuclear Corp., 550 Fifth Ave., New York 26, N. Y.
Gibbs Mfg. Co., N. Main St., Janesville, Wis.
Giannini & Co., Inc., G. M., 918 E. Green St., Pasadena, Calif.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Helipot Div. of Beckman Instruments, Fullerton, Calif.
Hydel, Inc., 99 First St., Cambridge 41, Mass.
Industrial Instrument Div., Mandrel Industries, Inc., 5134 Glenmont, Houston, Texas
Industrial Test Equipment Co., 55 E. 11th St., New York 3, N. Y.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Kearfott Co., Inc., Engineering & Sales Div., 1378 Main Ave., Clifton, N. J.
Ketay Dept., Norden Div. of United Aircraft Corp., Jericho Turnpike, Commack, N. Y.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Link Aviation, Inc., Binghamton, N. Y.
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Magnavox Co., The, Fort Wayne, Ind.
Magnetic Instruments Co., Inc., 546 Commerce St., Thornwood, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Muirhead & Co., Ltd., Beckenham, Kent, England
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
Oilgear Co., The, 16th St & Pierce, Milwaukee 1, Wis.
Oster Mfg. Co., John, Avionic Div., 1 Main St., Racine, Wis.
Phoenix Precision Instrument Co., 3803-05 N. Fifth St., Philadelphia, Pa.
Radiation, Inc., P. O. Box 37, Melbourne, Fla.
Raytheon Mfg. Co., Nuclear Power Group, 28 Seyon St., Waltham 54, Mass.
Reeves Instrument Corp., Roosevelt Field, Garden City, N. Y.
Servo-Tek Products Co., 1086 Goffe Rd., Hawthorne, N. J.
Smith Corp., A. O., 3533 N. 27th St., Milwaukee 1, Wis.
Spectrol Electronics Corp., 1704 S. Del Mar Ave., San Gabriel, Calif.
Sperry Gyroscope Div. of Sperry-Rand Corp., Great Neck, N. Y.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Trio Machine Works, Inc., 3045 N. 3rd St., Philadelphia 33, Pa.
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Western Gear Corp., P. O. Box 182, Lynwood, Calif.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

SHAFTS—Flexible

Johnson Co., E. F., Waseca, Minn.
Kupfrian Mfg. Corp., 350 State St., Binghamton, N. Y.
Stewart Corp., F. W., 4311-13 Ravenswood Ave., Chicago 13, Ill.
Stow Mfg. Co., 355 Shear St., Binghampton, N. Y.
White Dental Mfg. Co., S. S., 10 E. 40th St., New York 16, N. Y

SHELLS—Cylindrical

ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave., Portland 10, Ore. ADV. PG. 175
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
SANDUSKY FOUNDRY & MACHINE CO., W. Market St., Sandusky, Ohio ADV. PG. 147
U. S. PIPE & FOUNDRY CO., STEEL & TUBES DIV., Burlington, N. Y. ADV. PG. 14, 15
WISCONSIN STAINLESS FOUNDRY & MACHINE CORP., 823 E. St. Paul Ave., Waukesha, Wis. ADV. PG. 255

SHELLS—Stator

Industrial Forge & Steel, Inc., 1501 Allen Ave., S. E., Canton, Ohio
SANDUSKY FOUNDRY & MACHINE CO., W. Market St., Sandusky, Ohio ADV. PG. 147
U. S. PIPE & FOUNDRY CO., STEEL & TUBES DIV., Burlington, N. J. ADV. PG. 14, 15

SHIELDING—Radiation

See also BRICK—Radiation Shielding
CONCRETE—High Density

Ace Engineering & Machine Co., Inc., Tomlinson Rd., Huntingdon Valley, Pa.
Advanced Products Co., 59 Broadway, North Haven, Conn.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Air Engineering Co., 49 Hillside St., Watertown 72, Mass.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
Allied Resinous Products Inc., Box 620, Conneaut, Ohio
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Alloys Unlimited, Inc., 44-13 Vernon Blvd., Long Island City 1, N. Y.
Alpha Metals, Inc., 56 Water St., Jersey City 4, N. J.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
American Agile Corp., P. O. Box 168, Bedford, Ohio
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
American Nuclear Science Corp., 61 Broadway, New New York 20, N. Y.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Andel & Co., Inc., 5218 N. Kedzie Ave., Chicago 25, Ill.
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada ADV. PG. 155
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn 7, N. Y.
Brooks & Perkins, Inc., 261 Constitution Ave., N. W., Washington 1, D. C.
CAMBRIDGE SMELTING CO., 100 Pacific St., Cambridge, Mass. ADV. PG. 238
Canadian Radium & Uranium Corp., 530 Fifth Ave., New York 20, N. Y.
Chemical Development Corp., Endicott St., Danvers, Mass.
Chicago Steel Tank Co., 6400 W. 66th St., Chicago, Ill.
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Continental Cooper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
DAVISON CHEMICAL DIV. OF W. R GRACE CO., REACTOR MATERIALS PLANT, P. O. Box 218, Erwin, Tenn. ADV. PG. 154
Dewey & Co., Inc., G. C., 202 E. 44th St., New York 36, N. Y.
Division Lead Co., 7742 W. 61st Place, Summit, Ill
Edlow Lead Co., 729 Bank St., Columbus 16, Ohio
Emerson & Cuming, Inc., 869 Washington St., Canton, Mass.
Farrel-Birmingham Co., Inc., Ansonia, Conn.
FEDERATED METALS DIV., AMERICAN SMELTING & REFINING CO., 120 Broadway, New York 5, N. Y. ADV. PG. 111
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.

General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Lead Construction Corp., 1800 Harrison Ave., Kearny, N. J.
General Radiological Ltd., 15-18 Clipstone St., London, W. 1, England
Glaser Lead Co., Inc., 31 Wyckoff Ave., Brooklyn 27, N. Y
Instruments, Inc., 122 N. Madison, P. O. Box 556, Tulsa, Okla.
Isotope Accessories Co., The, 5312 Westminster Ave., Philadelphia 31, Pa.
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
KELLEY & CO., O. G., 98 Taylor St., Dorchester Mass. ADV. PG. 64, 65
Kennametal, Inc., Latrobe, Pa.
Knapp Mills, Inc., 23-15 Borden Ave., Long Island City 1, N. Y.
LEAD PRODUCTS, INC., Hartford Rd., Manchester, Conn. ADV. PG. 238
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
McMillan Industrial Corp., Brownville Avenue Plant, Ipswich, Mass.
Mallory & Co., Inc., P. R., 58 S. Gray St., Indianapolis 6, Ind
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
MEDICAL ENGINEERING CORP., 11 University Rd., Cambridge 38, Mass. ADV. PG. 257
NATIONAL BERYLLIA CORP., 4501 Dell Ave., North Bergen, N. J. ADV. PG. 254
NATIONAL CARBON CO., DIV. OF UNION CARBIDE CORP., 30 E. 42nd St., New York 17, N. Y. ADV. PG. Fourth Cover
National Lead Co., 111 Broadway, New York 6, N. Y.
NUCLEAD, INC., 110 Pacific St., Cambridge, Mass. ADV. PG. 238
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago 10, Ill. ADV. PG. 91
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N J.
Nuclear Engineering Ltd., Woolwich Rd., London S. E. 7, England
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
RADIATION APPLICATIONS INC., 370 Lexington Ave., New York 17, N. Y. ADV. PG. 238
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
Radiation Detection Co., 4047-49 Transport St., Palo Alto, Calif.
RAY-PROOF CORP., 843 Canal St., Stamford, Conn. ADV. PG. 272
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Technical Research Group, Inc., 2 Aerial Way, Syosset, N. Y.
Telectro Industries Corp., 35-16 37th St., Long Island City 1, N. Y.
Titeflex, Inc., Hendee St., Springfield 4, Mass.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
U. M. & F. Mfg. Co., 10929 Vanowen St., North Hollywood, Calif.
U. S. Borax & Chemical Corp., Pacific Coast Borax Co., Div., 50 Rockefeller Plaza, New York 20, N. Y.
WOOD COUNTER LABORATORY, N., 1525 E. 53rd St., Chicago 15, Ill. ADV. PG. 207

SHIELDS—Maanetic

ALLEGHENY LUDLUM STEEL CORP., Oliver Bldg., Room 2020, Pittsburgh 22, Pa. ADV. PG. 109
Magnetics, Inc., Box 391, Butler, Pa.
Millen Mfg. Co., James, 150 Exchange St, Malden, Mass.
NATIONAL RADIAC INC., 479 Washington St., Newark 2, N. J. ADV. PG. 233
New Jersey Safety Equipment Co., Park Ave. at Garden State Pkwy., East Orange, N. J.
PERFECTION MICA CO., MAGNETIC SHIELD DIV., 1322 N. Elston Ave, Chicago 22, Ill. ADV. PG. 234
Transonic, Inc., 808 16th St., Box 59, Bakersfield, Calif.
U. M. & F. Mfg. Co., 10929 Vanowen St., North Hollywood, Calif.
United Transformer Corp., 150 Varick St., New York 13, N. Y.

SIGNS—Warning, Radiation

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Abbott Laboratories, Oak Ridge, Tenn.
Allied Plastics Supply Corp., 75 Cliff St, New York 38, N. Y.
ATOMIC ACCESSORIES INC., 244-04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
Atomic Energy Waste Disposal Service, 5410 Bond St., Oakland 1, Calif.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
Brady Co., W. H., 727 W. Glendale Ave., Milwaukee 9, Wis.
General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50, Pa.
Instruments, Inc., 122 N. Madison, P. O. Box 556, Tulsa, Okla.
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG 158, 229
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Minnesota Mining & Mfg. Co., 900 Brush Ave., St. Paul 6, Minn.
New Jersey Safety Equipment Co., Park Ave. at Garden State Pkwy., East Orange, N. J.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Pacific Transducer Corp., 11836 S. W. Pico Blvd., Los Angeles 64, Calif.
READY MADE SIGN CO., 115 Worth St., New York, N. Y ADV. PG. 242
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
UNITED STATES RADIUM CORP., P. O. Box 246, Morristown, N. J. ADV. PG. 223
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.

SIMULATORS

See also COMPUTERS—Analog

SIMULATORS—Reactor

ACF INDUSTRIES, INC., NUCLEAR PRODUCTS-ERCO DIV., 508 Kennedy St., N. W., Washington 11, D. C. ADV. PG. 43
AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Atomic Laboratories, Berkeley, Calif.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG 237
Avtron Mfg., Inc., 10409 Meech St., Cleveland, Ohio
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Electronic Associates, Inc., Long Branch, N. J.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N Y.
Hydel, Inc., 99 First St., Cambridge 41, Mass.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Link Aviation, Inc., Binghamton, N. Y.
Matthew Laboratories, 146 Riverdale Ave, Yonkers 2, N. Y.
Mid-Century Instrumatic Corp., 611 Broadway, New York 12, N. Y.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
Tammen & Denison, Inc., 4751 N. Olcott NB, Chicago 31, Ill.
Waldorf Instrument Co., Div of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

SINKS—Laboratory

See also FURNITURE—Laboratory

Adler's Metal Works, 1310 Germantown Ave., Philadelphia 22, Pa.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Resinous Products, Inc., Box 620, Conneaut, Ohio
American Agile Corp., P. O. Box 168, Bedford, Ohio
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Baird & Tatlock (London) Ltd., Freshwater Rd., Chadwell Heath, Essex, England
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
BLICKMAN, INC., S. 7900 Gregory Ave., Weehawken, N. J ADV. PG. 190
Brown Morse Co., Muskegan, Mich.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
Duralab Equipment Corp., 980 Linwood St., Brooklyn 8, N Y.
Duriron Co., Inc., 450 N. Findlay St., Dayton 4, Ohio
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
Hamilton Mfg. Co., Two Rivers, Wis.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Industrial Plastic Fabricators, Endicott St., Norwood, Mass.
KEWAUNEE MFG CO., 5083 S. Center St., Adrian, Mich. ADV. PG. 164
Knight Co., Maurice A., 171 Kelly Ave., Akron, Ohio
Metalab Equipment Co., Div. of Norbute Corp., 282 Duffy Ave., Hicksville, N. Y.
Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio
Towers & Co., Ltd., J. W, Victoria House, Widnes, Lancs., England
U. S. Stoneware Co., Akron 9, Ohio
Universal Industrial Equipment Co., 1625 Paterson Plank Rd., Secaucus, N. J.
Warren Corp., The, 2901 Brighton Rd., Pittsburgh 12, Pa.

SITE SELECTION

See Services

SOLENOIDS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Allen-Bradley Co., 136 W. Greenfield Ave., Milwaukee 4, Wis
AUTOMATIC SWITCH CO., 56-N Hanover Rd., Florhom Park, N. Y. ADV. PG. 99
B/W Controller Corp., 2200 E. Maple Rd., Birmingham, Mich.
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
Caltron Products Co., 3518 W. Pico Blvd., Los Angeles 19, Calif.
Cannon Electric Co., 3208 Humboldt St., Los Angeles 31, Calif.
Comar Electric Co., 3349 W. Addison St., Chicago 18, Ill.
Communication Accessories Co., Lee's Summit, Mo.
Controls Co. of America, 2450 N. 32nd St., Milwaukee 45, Wis.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Cutler-Hammer, Inc., 411 N. 12th St., Milwaukee 1, Wis.
Geisler Laboratories, P. O. Box 252, Menlo Park, Calif.
General Controls Co., 801 Allen Ave., Glendale Ave., Glendale 1, Calif.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Goslin Electric & Mfg. Co., 2921 W. Olive St., Burbank, Calif.
Guardian Electric Co., 1625 W. Walnut St., Chicago 12, Ill.
Keckley Co., O. C., 3400 Cleveland St., Skokie, Ill
Knopp, Inc., 1307 66th St., Emeryville 8, Calif.
Koomtz-Wagner Electric Co., N. Michigan & Merion, South Bend, Ind.
Land Air, Inc., 2133 Adams Ave., San Leandro, Calif.
Laurence Co., Inc., R. G., 134 Summit St., Tenafly, N. J.
Leland, Inc, G. H., 123 Webster, Dayton 2, Ohio
LYNDON AIRCRAFT, 140 Clifford St., Newark, N. J. ADV. PG. 250
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Philips Control Corp., 59 W. Washington St., Joliet, Ill.
Potlak Corp., Joseph, 81 Freeport St., Boston 22, Mass.
RBM Div., Essex Wire Corp., 131 Godfrey, Logansport, Ind.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Telectro Industries Corp., 35-16 37th St., Long Island City 1, N. Y.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
Vickers, Inc., Electric Products Div., 1840 Locust St, St. Louis 3, Mo.
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
Wave Particle Corp., P. O. Box 252, Menlo Park, Calif.
Wheeler Electronic Corp., Sub. of Sperry Rand Corp., 150 E. Aurora St., Waterbury 20, Conn.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

SOURCES—Alpha

Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada. ADV. PG. 155
Atomic Laboratories, Berkeley, Calif.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Canadian Radium & Uranium Corp., 630 Fifth Ave., New York 20, N. Y.
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229

NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
Nuclear Aids Corp., 612 N. Michigan Ave., Chicago, Ill.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Radiochemical Centre, The, Amersham, Buckinghamshire, England
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
UNITED STATES RADIUM CORP., P. O. Box 246, Morristown, N. J. ADV. PG. 223

SOURCES—Beta

Abbott Laboratories, Oak Ridge, Tenn.
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada. ADV. PG. 155
Atomic Laboratories, Berkeley, Calif.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Canadian Radium & Uranium Corp., 630 Fifth Ave., New York 20, N. Y.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NEW ENGLAND NUCLEAR CORP., 575 Albany St., Boston, Mass. ADV. PG. 233
Nuclear Aids Corp., 612 N. Michigan Ave., Chicago, Ill.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Patterson Moos Div., Universal Winding Co., 90-28 Van Wyck Expressway, Jamaica 18, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
RADIATION APPLICATIONS, INC., 370 Lexington Ave., New York 17, N. Y. ADV. G. 238
Radiochemical Centre, The, Amersham, Buckinghamshire, England
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
UNITED STATES RADIUM CORP., P. O. Box 246, Morristown, N. J. ADV. PG. 223
Western Radiation Lab., 1107 W. 24th St., Los Angeles 7, Calif.

SOURCES—Gamma

Abbott Laboratories, Oak Ridge, Tenn.
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada. ADV. PG. 155
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
BUDD CO., NUCLEAR SYSTEMS DIV., 2950 Roberts Ave., Philadelphia 32, Pa. ADV. PG. 187
Canadian Radium & Uranium Corp., 630 Fifth Ave., New York 20, N. Y.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
Knapp Mills, Inc., 23-15 Borden Ave., Long Island City 1, N. Y.
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
NEW ENGLAND NUCLEAR CORP., 575 Albany St., Boston, Mass. ADV. PG. 233
Nuclear Aids Corp., 612 N. Michigan Ave., Chicago, Ill.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
Nuclear Research Corp., Southampton, Pa.
Patterson Moos Div., Universal Winding Co., 90-28 Van Wyck Expressway, Jamaica 18, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
RADIATION APPLICATIONS INC., 37 Lexington Ave., New York 17, N. Y. ADV. G. 238
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Radiochemical Centre, The, Amersham, Buckinghamshire, England
RADIUM CHEMICAL CO., 161 E. 42nd St., New York 17, N. Y. ADV. PG. 241
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Western Radiation Lab., 1107 W. 24th St., Los Angeles 7, Calif.

SOURCES—Neutron

See also GENERATORS—Neutron
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
American-Standard Atomic Energy Div., 1682 Broadway, Redwood City, Calif.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada. ADV. PG. 155
Atomic Laboratories, Berkeley, Calif.
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Canadian Radium & Uranium Corp., 630 Fifth Ave., New York 20, N. Y.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Patterson Moos Div., Universal Winding Co., 90-28 Van Wyck Expressway, Jamaica 18, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Radiochemical Centre, The, Amersham, Buckinghamshire, England
RADIUM CHEMICAL CO., 161 E. 42nd St., New York 17, N. Y. ADV. PG. 241
Schlumberger Well Survey Corp., Ridgefield, Conn.
Scientific Engineering Laboratory, 1510 6th St., Berkeley 10, Calif.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
UNITED STATES RADIUM CORP., P. O. Box 246, Morristown, N. J. ADV. PG. 223

SOURCES—Standard

Abbott Laboratories, Oak Ridge, Tenn.
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
ATOMIC ENERGY OF CANADA, LTD., COMMERCIAL PRODUCTS DIV., P. O. Box 93, Ottawa, Ontario, Canada. ADV. PG. 155
ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Canadian Radium & Uranium Corp., 630 Fifth Ave., New York 20, N. Y.
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
NEW ENGLAND NUCLEAR CORP., 575 Albany St., Boston, Mass. ADV. PG. 233
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago 10, Ill. ADV. PG. 91
Nuclear Corp. of America, Inc., 400 Park Ave., New York 1, N. Y.
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Radiochemical Centre, The, Amersham, Buckinghamshire, England
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
UNITED STATES RADIUM CORP., P. O. Box 246, Morristown, N.J. ADV. PG. 223
Western Radiation Lab., 1107 W. 24th St., Los Angeles 7, Calif.

SPECTROGRAPHS

Applied Research Labs., Inc., P. O. Box 1710, Glendale 5, Calif.
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
BALL BROTHERS RESEARCH CORP., Industrial Park, Boulder, Colo. ADV. PG. 74
Bausch & Lomb Optical Co., 630 St. Paul St., Rochester 2, N. Y.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Ercona Corp., Scientific Instrument Div., 16 W. 46th St., New York 36, N. Y.
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
NUCLIDE ANALYSIS ASSOCIATES, P. O. Box 752, State College, Pa. ADV. PG. 257
Philips Electronics Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86

SPECTROMETERS—Alpha & Beta Ray

BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
CANADAIR LTD., P. O. Box 6987, Montreal, Que., Canada ADV. PG. 185
CRYSTALS, INC., 123 Woodland Ave., Dept. N. B. G., Westwood, N. J. ADV. PG. 228
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston, Ill. ADV. PG. 229
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
ISOTOPE DEVELOPMENTS, LTD., Benham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157

SPECTROMETERS—Gamma Ray

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
CONVAIR DIV. OF GENERAL DYNAMICS CORP., San Diego 12, Calif. ADV. PG. 149
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
ELDORADO ELECTRONICS CO., 2821 10th St., Berkeley, Calif. ADV. PG. 232
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
ISOTOPE DEVELOPMENTS, LTD., Benham Grange, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Nuclear Enterprises (G. B.) Ltd., Sighthill, Edinburgh, Scotland
NUCLEAR MEASUREMENTS CORP., 2460 N. Arlington Ave., Indianapolis 18, Ind. ADV. PG. 146
PACKARD INSTRUMENT CO., INC., P. O. Box 428, La Grange, Ill. ADV. PG. 82
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
TULLAMORE ELECTRONICS LABORATORY, 6055 S. Ashland Ave., Chicago 36, Ill. ADV. PG. 255
VICTOREEN INSTRUMENT CO., 5800-11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203

SPECTROMETERS—Liquid Scintillation

BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
JOHNSTON LABORATORIES, INC., WILLIAM H., Lafayette, Ind. ADV. PG. 254
Nuclear Enterprises (G. B.) Ltd., Sighthill, Edinburgh, Scotland
PACKARD INSTRUMENT CO., INC., P. O. Box 428, La Grange, Ill. ADV. PG. 82

Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TECHNICAL MEASUREMENTS CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157

SPECTROMETERS—Mass & Isotope Separation

American Optical Co., Instrument Div., Box A, Buffalo 15, N. Y.
Atomic Laboratories, Berkeley, Calif.
Beckman/Scientific & Process Instruments Div., Beckman Instruments, Inc., 2500 Fullerton Rd., Fullerton, Calif.
BENDIX AVIATION CORP., CINCINNATI DIV., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Gamma Industrie, 52, Rue de Dunkerque, Paris, France
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
NUCLIDE ANALYSIS ASSOCIATES, P. O. Box 752, State College, Pa. ADV. PG. 257
Pacific Electric Motor Co., 1009 66th Ave., Oakland 21, Calif.
Phoenix Precision Instrument Co., 3803-05 N. 5th St., Philadelphia, Pa.
Process & Instruments, 15 Stone Ave., Brooklyn 33, N. Y.
Twentieth Century Electronics Ltd., Centronics Works, New Addington, Croydon, Surrey, England
Vacuum Industrial Applications, Ltd., Netherton Rd., Wishaw, Lanarkshire, Scotland

SPECTROMETERS—Nuclear Magnetic Resonance

American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
Mullard Equipment Ltd., Mullard House, Torrington London, W. C. 1, England
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. ADV. PG. 198, 199
Perkin-Elmer Corp., Main Ave., Norwalk, Conn.
PHILIPS' GOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Polarad Electronics Corp., 43-20 34th St., Long Island City 1, N. Y.
Schlumberger Well Survey Corp., Ridgefield, Conn.
Sperry Gyroscope Div. of Sperry-Rand Corp., Great Neck, N. Y.
Varian Associates, 611 Hansen Way, Palo Alto, Calif.

SPECTROMETERS—Recording

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Applied Research Labs., Inc., P. O. Box 1710, Glendale 5, Calif.
BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Bruel & Kjaer, Naerum, Denmark
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
Neutronics Research Co., 165 Lake St., Waltham, Mass.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago, Ill. ADV. PG. 91
NUCLEAR-ELECTRONICS CORP., 2925 N. Broad St., Philadelphia 32, Pa. ADV. PG. 40
Perkin-Elmer Corp., Main Ave., Norwalk, Conn.
Phoenix Precision Instrument Co., 3803-05 N. 5th St., Philadelphia, Pa.
RADIATION COUNTER LABS., INC., 5122 W. Grove St., Skokie, Ill. ADV. PG. 29
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51

SPECTROPHOTOMETERS

Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
American Electronic Laboratories, Inc., 121 N. 7th St., Philadelphia 6, Pa.
American Optical Co., Instrument Div., Box A, Buffalo 15, N. Y.
APPLIED PHYSICS CORP., 2724 S. Peck Rd., Monrovia, Calif. ADV. PG. 210
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
Bausch & Lomb Optical Co., 630 St. Paul St., Rochester 2, N. Y.
Beckman/Scientific & Process Instruments Div., Beckman Instruments, Inc., 2500 Fullerton Rd., Fullerton, Calif.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Ercona Corp., Scientific Instrument Div., 16 W. 46th St., New York 36, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Instrument Development Lab., Inc., 67 Mechanic St., Attleboro, Mass.
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
Kruger Instruments, Harold, P. O. Box 164, San Gabriel, Calif.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
LIBRASCOPE, INC., 808 Western Ave., Glendale, Calif. ADV. PG. 246
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Neutronics Research Co., 165 Lake St., Waltham, Mass.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Perkin-Elmer Corp., Main Ave., Norwalk, Conn.
Phoenix Precision Instrument Co., 3803-05 N. 5th St., Philadelphia, Pa.
Process & Instruments, 15 Stone Ave., Brooklyn 33, N. Y.
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.

SPRINGS

ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
General Cement Mfg. Co., Div. of Textron, Inc., 400 S. Wyman St., Rockford, Ill.
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas

STATOR SHELLS

See SHELLS—Stator

STEAM GENERATORS

See also HEAT EXCHANGERS

ALCO PRODUCTS INC., Schenectady 5, N. Y. ADV. PG. 179
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
Babcock & Wilcox Ltd., Babcock House, 209 Euston Rd., London N. W. 1, England
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Condenser Service & Engineering Co., Inc., 150 Observer Highway, Hoboken, N. J.
Eclipse Fuel Engineering Co., 100 Buchanan, Rockford, Ill.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
GRISCOM-RUSSELL CO., SUB. OF GENERAL PRECISION EQUIPMENT CORP., Massillon, Ohio ADV. PG. 98
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Riley Stoker Corp., 90 Neponset St., Worcester 8, Mass.
Struthers-Wells Corp., Warren, Pa.
Vogt Machine Co., Henry, 1000 W. Ormsby St., Louisville, Ky.
Wiegand Co., Edwin L., 7895 Thomas Blvd., Pittsburgh 8, Pa.

STILLS—Distilled Water

American Sterilizer Co., Box 620, Erie, Pa.
BARNSTEAD STILL & STERILIZER CO., 84 Lanesville Terrace, Boston 31, Mass. ADV. PG. 227
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Condenser Service & Engineering Co., Inc., 150 Observer Highway, Hoboken, N. J.
Fish-Schurman Corp., 75 Portman Rd., New Rochelle, N. Y.
General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50, Pa.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
GRISCOM-RUSSELL CO., SUB. OF GENERAL PRECISION EQUIPMENT CORP., Massillon, Ohio ADV. PG. 98
Maxim Silencer Co., The, Homestead Ave., Hartford, Conn.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
STOKES CORP., F. J., 5500 Tabor Rd., Philadelphia 20, Pa. ADV. PG. 268
Tenso-Lab Inc., S. Buckhout St., Irvington-on-Hudson, N. Y.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England.

STILLS—Laboratory

Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
American Sterilizer Co., Box 620, Erie, Pa.
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
Baird & Tatlock (London) Ltd., Freshwater Rd., Chadwell Heath, Essex, England
BARNSTEAD STILL & STERILIZER CO., 84 Lanesville Terrace, Boston 31, Mass. ADV. PG. 227
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Consolidated Electrodynamics Corp., Rochester Div. 1775 Mt. Read Blvd., Rochester, N. Y.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
Kontes Glass Co., Dept. P-159, Vineland, N. J.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Tenso-Lab Inc., S. Buckhout St., Irvington-on-Hudson, N. Y.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England
Townsend & Mercer, Ltd., Croydon, Surrey, England

STIRRERS AND MIXERS

Abbe Engineering Co., 50 Church St., New York 7, N. Y.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Baird & Tatlock (London) Ltd., Freshwater Rd., Chadwell Heath, Essex, England
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Eastern Industries, Inc., 100 Skiff St., Hamden, Conn.
Eberbach Corp., Ann Arbor, Mich.
Ertel Engineering Corp., Kingston 31, N. Y.
Farrel-Birmingham Co., Inc., Ansonia, Conn.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
LaPine & Co., Arthur S., 6001 S. Knox Ave., Chicago 29, Ill.
Mixing Equipment Co., Inc., 192 Mt. Read Blvd., P. O. Box 1370, Rochester 3, N. Y.
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Thomas Co., Arthur A., Vine St. at Third, Box 779, Philadelphia 5, Pa.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England
Tri-R Instruments, 144-13 Jamaica Ave., Jamaica 35, N. Y.
U. S. Gasket Co., Plastics Div. of The Garlock Packing Co., 600 N. 10th St., Camden 1, N. J.
U. S. Stoneware Co., Akron 9, Ohio

STRAINERS—Steam

Anderson Co., V. D., Div. of International Basic Economy Corp., 1935 W. 96th St., Cleveland 2, Ohio
ATWOOD & MORRILL CO., Salem, Mass. ADV. PG. 204
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
Clark Mfg. Co., 1830 E. 38th St., Cleveland 14, Ohio
Cuno Engineering Corp., 80 S. Vine St., Meriden, Conn.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Hays Mfg. Co., 814 W. 12th St., Erie, Pa.
Keckley Co., O. C., 3400 Cleveland St., Skokie, Ill.
Kieley & Mueller Co., Inc., 64 Genung St., Middletown, N. Y.
LADISH CO., 5458 S. Packard Ave., Cudahy, Wis. ADV. PG. 46, 47
Leslie Co., 299 Grant Ave., Lyndhurst, N. J.
Plummer, Lawley & Co., 1022 Lancaster Ave., Rosemont, Pa.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
Ruggles-Klingemann Mfg. Co., Salem, Mass.
Sarco Co., Inc., 350 Fifth Ave., New York 1, N. Y.
Schutte & Koerting Co., Cornwells Heights, Bucks County, Pa.
Squires Co., C. E., 18805 Syracuse Ave., Cleveland 10, Ohio
Yarnall-Waring Co., Chestnut Hill, Philadelphia 18, Pa.

STRESS ANALYSIS EQUIPMENT

Allegany Instrument Co., Inc., Cumberland, Md.
Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
Baldwin-Lima-Hamilton Corp., Electronics & Instrumation Div., 42 Fourth Ave., Waltham 54, Mass.
Bruel & Kjaer, Naerum, Denmark
Brush Instruments Div. of Clevite Corp., 3405 Perkins Ave., Cleveland 14, Ohio
Buehler, Ltd., 2120 Greenword St., Evanston, Ill.
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
MAGNAFLUX CORP., 7346 W. Lawrence Ave., Chicago 31, Ill. ADV. PG. 239
St. John X-Ray Laboratory, Califon, N. J.

SUBCRITICAL ASSEMBLIES

See also REACTORS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago 10, Ill. ADV. PG. 91

SUPERHEATERS

ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
Babcock & Wilcox Ltd., Babcock House, 209 Euston Rd., London N. W. 1, England
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
GRISCOM-RUSSELL CO., SUB. OF GENERAL PRECISION EQUIPMENT CORP., Massillon, Ohio ADV. PG. 98
Wiegand Co., Edwin L., 7895 Thomas Blvd., Pittsburgh 8, Pa.

SWITCHES

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.
Allen-Bradley Co., 136 W. Greenfied Ave., Milwaukee 4, Wis.
Allied Control Co., Inc., 2 East End Ave., New York 21, N. Y.
Automatic Electric Sales Corp., North Lake, Ill.
AUTOMATIC SWITCH CO., 56-N Hanover Rd., Florham Park, N. J. ADV. PG. 99
Automatic Timing & Controls, Inc., King of Prussia, Pa.
Barton Instrument Corp., 580 S. Monterey Pass Rd., Monterey Park, Calif.
Beck's, Inc., 298-300 E. Fifth St., St. Paul 1, Minn.
Bourns Laboratories, Inc., 6135 Magnolia Blvd., Riverside, Calif.
Burroughs Corp., Electronic Tube Div., P. O. Box 1226, Plainfield, N. J.
Centralab Div. of Globe-Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.
Century Electronics & Instruments, Inc., P. O. Box 6216, Tulsa 10, Okla.
Cinema Engineering Co., Div. of Aerovox Corp., 1100 Chestnut St., Burbank, Calif.
COLE ELECTRIC CO., 8439 Stellar Drive, Culver City, Calif. ADV. PG. 193
Comar Electric Co., 3349 W. Addison St., Chicago 18, Ill.
Computer Instruments Corp., 92 Madison Ave., Hempstead, N. Y.
Consolidated Controls Corp., Durant Ave., Bethel, Conn.
Continental Carbon Div. of Wirt Co., 5221 Greene St., Philadelphia 44, Pa.
Control Products, Inc., 306 Sussex St., Harrison, N. J.
Controls Co. of America, 2450 N. 32nd St., Milwaukee 45, Wis.
Cutler-Hammer, Inc., 412 N. 12th St., Milwaukee 1, Wis.
Daven Co., The, Route 10, Livingston, N. J.
DEL ELECTRONICS CORP., 521 Homestead Ave., Mount Vernon, N. Y. ADV. PG. 241
DeMornay-Bonardi, Inc., 780 S. Arroyo Parkway, Pasadena, Calif.
Digitran Co., The, 45 W. Union St., Pasadena, Calif.
Durakool, Inc., 1010 N. Main St., Elkhart, Ind.
Ebert Electronics Corp., 212-26 Jamaica Ave., Queens Village 28, N. Y.
El-Tronics, Inc., Suburban Station Bldg., Philadelphia, Pa.
Engineered Electronics Co., 506 E. 1st St., Santa Ana, Calif.
Fasco Industries, Inc., Rochester 2, N. Y.
FRIEZ INSTRUMENT DIV., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
General Cement Mfg. Co., Div. of Textron, Inc., 400 S. Wyman St., Rockford, Ill.
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co., Construction Materials Div., 1285 Boston Ave., Bridgeport 2, Conn.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Guardian Electric Co., 1625 W. Walnut St., Chicago 12, Ill.
Hetherington, Inc., 1420 Delmar Drive, Folcroft, Pa.
Hughes Products, Airport Station, Los Angeles 45, Calif.
Industrial Instruments, Inc., 89 Commerce Rd., Cedar Grove, N. J.
Instrument Development Lab., Inc., 67 Mechanic St., Attleboro, Mass.
International Instruments Co., P. O. Box 2954, New Haven 15, Conn.
International Register Co., 2620 W. Washington Blvd., Chicago 12, Ill.
J-B-T Instruments, Inc., 133 Hamilton St., New Haven 8, Conn.
Jennings Radio Mfg. Corp., 970 McLaughlin Ave., P. O. Box 1278, San Jose 12, Calif.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Kellogg Switchboard & Supply Co., IT&T Div., 6650 S. Cicero Ave., Chicago 38, Ill.
Kulka Electronic, Inc., 633 S. Fulton Ave., Mt. Vernon, N. Y.
Lewis Engineering Co., 52 Rubber Ave., Naugatuck, Conn.
MAGNETROL, INC., 2115 S. Marshall Blvd., Chicago 23, Ill. ADV. PG. 222
Mallory & Co., Inc., P. R., 58 S. Gray St., Indianapolis 6, Ind.
Mercoid Corp., 4201 Belmont Ave., Chicago 41, Ill.
Meriam Instrument Co., The, 10920 Madison Ave., Cleveland 2, Ohio
Metals & Controls Corp., Spencer Thermostat Div., 40 Forest St., Attleboro, Mass.
Micro Switch Div. of Minneapolis-Honeywell Regulator Co., 7 W. Spring St., Freeport, Ill.
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Network Industries Inc., P. O. Box 397, Bayonne, N. J.
Ohmite Mfg. Co., 3601 Howard St., Skokie, Ill.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holand ADV. PG. 86
Pollak Corp., Joseph, 81 Freeport St., Boston 22, Mass.
RBM Div., Essex Wire Corp., 131 Godfrey, Logansport, Ind.
Resitron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
Robertshaw-Fulton Controls Co., Aeronautical & Instrument Div., Santa Ana Freeway at Euclid Ave., Anaheim, Calif.
Shallcross Mfg. Co., Selma, N. C.
Stackpole Carbon Co., St. Marys, Pa.
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England ADV. PG. 66
Tech Laboratories, Inc., Bergen & Edsall Blvds., Palisades Park, N. J.
Techniques, Inc., P. O. Box 85, Hackensack, N. J.
Teletronics Laboratory, Inc., 54 Kinkel St., Westbury, N. Y.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Torsion Balance Co., 35 Monhegan St., Clifton, N. J.
Tung-Sol Electric, Inc., 95 Eighth Ave., Newark 4, N. J.
Unimax Switch Div. of The W. L. Maxson Corp., Ives Rd., Wallingford, Conn.
Wallace & Tiernan, Inc., 25 Main St., Belleville 9, N. J.
Weltronic Co., 19500 W. Eight Mile Rd., Detroit 41, Mich.
Wiegand Co., Edwin L., 7895 Thomas Blvd., Pittsburgh 8, Pa.
Winslow Co., Inc., 705 Lehigh Ave., P. O. Box 394, Union, N. J.

TANKS

Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Allied Resinous Products, Inc., Box 620, Conneaut, Ohio
American Agile Corp., P. O. Box 168, Bedford, Ohio
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
BARNSTEAD STILL & STERILIZER CO., 84 Lanesville Terrace, Boston 31, Mass. ADV. PG. 227
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
Black, Sivalls & Bryson Inc., 7500 E. 12th St., Kansas City 26, Mo.
Blaw-Knox Co., 300 Sixth Ave., M. G., Pittsburgh 22, Pa.
BLICKMAN, INC., S., 7900 Gregory Ave., Weehawken, N. J. ADV. PG. 190
Cambridge Corp., 2 Industrial Park, Lowell, Mass.
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Chicago Bridge & Iron Co., 1305 W. 105th St., Chicago 43, Ill.
Chicago Steel Tank Co., 6400 W. 66th St., Chicago, Ill.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Cooper Co., D. C., 1467 S. Michigan Ave., Chicago, Ill.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Doyle & Roth Mfg. Co., Inc., 136-50 24th St., Brooklyn 32, N. Y.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Electro Chemical & Mfg. Co., 750 N. Broad St., Emmaus, Pa.
General Lead Construction Corp., 1800 Harrison Ave., Kearny, N. J.
General Metals, Inc., 358 Goldboro St., P. O. Box 448, Greensboro, N. C.
GRAVER TANK & MFG. CO., INC., 4809 Todd Ave., East Chicago, Ind. ADV. PG. 195
Heraeus GmbH, W. C., 12-14 Heraeusstr., Hanau, Germany
Industrial Engineering Corp., 525 E. Woodbine, Louisville, Ky.
Industrial Plastic Fabricators, Endicott St., Norwood, Mass.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Knight Co., Maurice A., 171 Kelly Ave., Akron, Ohio
Leader Iron Works, Inc., 2150 N. Jasper St., Decatur, Ill.
Leavitt Machine Co., 10 E. River St., Orange, Mass.
Mica Insulator Div. of Minnesota Mining & Mfg. Co., 797 Broadway, Schenectady 1, N. Y.
New York Shipbuilding Corp., Camden, N. J.
Niagara Filters Div. & Tolhurst Centrifugals Div., American Machine & Metals, Inc., East Moline, Ill.
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
Pittsburgh-Des Moines Steel Co., Pittsburgh 25, Pa.
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
Scientific Engineering Laboratory, 1510 6th St., Berkeley 10, Calif.
Sparkler Mfg. Co., Mundelein, Ill.
Spincraft, Inc., 4158H W. State St., Milwaukee 8, Wis.
Standard Railway Equipment Mfg. Co., 200 S. Michigan Ave., Chicago 4, Ill.
Steel & Alloy Tank Co., 1 Bessemer St., Newark 5, N. J.
Streed Products Corp., P. O. Box 447, Gasden, Ala.
Struthers-Wells Corp., Warren, Pa.
Sun Shipbuilding & Dry Dock Co., Chester, Pa.
Teleweld Inc., 11535 Franklin St., Franklin Park, Ill.
U. M. & F. Mfg. Co., 10929 Vanowen St., North Hollywood, Calif.
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
U. S. Stoneware Co., Akron 9, Ohio
Warren Corp., The, 2901 Brighton Rd., Pittsburgh 12, Pa.
WHEELER MFG. CO., C. H., 19th & Lehigh Sts., Philadelphia 32, Pa. ADV. PG. 244
Willamette Iron & Steel Co., 2800 N. W. Front Ave., Portland 10, Ore.
York Corp., York, Pa.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

TAPES—Magnetic Recording

Ampex Corp., Instrumentation Div., 934 Charter St., Redwood City, Calif.
Minnesota Mining & Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.
RADIO CORP. OF AMERICA, TUBE DIV., 415 S. Fifth St., Harrison, N. J. ADV. PG. 170
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas.

TELEMETERING SYSTEMS

AEG—ABT, KEA, Hochhaus Sued, Frankfurt/Main Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
B-I-F Industries, Inc., 530-D Harris Ave., Providence 1, R. I.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Belock Instrument Corp., 111-01 14th Ave., College Point, N. Y.
BENDIX AVIATION CORP., BENDIX-PACIFIC DIV., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Burndept Ltd., West St., Erith, Kent, U. K.
Collins Corp., G. L., 2820 Hullett St., Long Beach, Calif.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Cubic Corp., 5575 Kearny Villa Rd., San Diego 11, Calif.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Data-Control Systems, Inc., 39 Rose St., Danbury, Conn.
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
Electronic Associates, Inc., Long Branch, N. J.
Electronic Engineering Co. of California, 1601 E. Chestnut St., Santa Ana, Calif.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Ericssons Telephones, Ltd., Instrumet Div., High Church St., New Basford, Nottingham, England
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.

GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N.Y. ADV .PG. 37-39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Giannini & Co., Inc., G. M., 918 E. Green St., Pasadena, Calif.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Hycon-Eastern, Inc., 75 Cambridge Parkway, Cambridge 42, Mass.
Instrument Development Lab., Inc., 67 Mechanic St., Attleboro, Mass.
Kellogg Switchboard & Supply Co., IT&T Div., 6650 S. Cicero Ave., Chicago 38, Ill.
Land Air, Inc., 2133 Adams Ave., San Leandro, Calif.
Landis & Gyr, Inc., 45 W. 45th St., New York 36, N. Y.
Leach Corp., 18435 Susana Rd., Compton, Calif.
Lenkurt Electric Co., 1105 County Rd., San Carlos, Calif.
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stamford, Conn.
Measurements Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Mycalex Corp. of America, Clifton Blvd., Clifton, N. J.
Nems Clarke Co., Div. of Vitro Corp. of America, 919 Jesup-Blair Drive, Silver Spring, Md.
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. ADV. PG. 198, 199
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
Radiation, Inc., P. O. Box 37, Melbourne, Fla.
Radio Frequency Labs., Inc., Boonton 2, N. J.
Rank Cintel Ltd., Worsley Bridge Rd., London S. E. 26, England
Raytheon Mfg. Co., Nuclear Power Group, 28 Seyon St., Waltham 54, Mass.
RIGGS NUCLEONICS CORP., 717 N. Victory Blvd., Burbank, Calif. ADV. PG. 267
Schlumberger Well Survey Corp., Ridgefield, Conn.
Simplex Valve & Meter Co., 7 E. Orange St., Lancaster, Pa.
Sperry Gyroscope Div. of Sperry-Rand Corp., Great Neck, N. Y.
Streeter-Amet Co., Grayslake, Ill.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Taller & Cooper Inc., 75 Front St., Brooklyn, N. Y.
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Telectro Industries Corp., 35-16 37th St., Long Island City 1, N. Y.
Tele-Dynamics, Inc., 5000 Palisade Ave., Philadelphia 3, Pa.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Waltham Electronics Corp., 751 Main St., Waltham, Mass.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

TELEVISION SYSTEMS—Closed Circuit

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Admiral Corp., 3800 W. Cortland St., Chicago 47, Ill.
Blonder-Tongue Laboratories, Inc., 9-25 Alling St., Newark 2, N. J.
Dage Television Div. of Thompson Products, Inc., 10th & Sheridan, Michigan City, Ind.
Diamond Power Specialty Corp., Lancaster, Ohio
DuMont Labs., Inc., Allen B., 760 Bloomfield Ave., Clifton, N. J.
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
FRIEZ INSTRUMENT DIV., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Precision Laboratory, Inc., 63 Bedford Rd., Pleasantville, N. Y.
Hallamore Eectronics Co., 8352 Brookhurst, Anaheim, Calif.
Kin Tel, 5725 Kearny Villa Rd., San Diego 11, Calif.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
PHOTO RESEARCH CORP., 837 N. Cahuenga Blvd., Hollywood 38, Calif. ADV. PG. 156
Radio Corporation of America, Industrial Electronic Products Div., Camden 2, N. J.
Resitron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
Spencer-Kennedy Labs., Inc., 1320 Soldiers Field Rd., Boston 35, Mass.
Standard Electronics Div. of Radio Engineering Labs., Inc., 29-01 Borden Ave., Long Island City 1, N. Y.
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.
Telectro Industries Corp., 35-16 37th St., Long Island City 1, N. Y.
Tel-Instrument Electronics Corp., 728 Garden St., Carlstadt, N. J.

TEST EQUIPMENT—Nondestructive

AEROJET-GENERAL NUCLEONICS, P. O. Box 77, San Ramon, Calif. ADV. PG. 169
Alcar Instruments, Inc., 17 Industrial Ave., Little Ferry, N. J.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
ANTON ELECTRONIC LABS., INC., 1226-38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
Arenberg Ultrasonic Lab., Inc., 94 Green St., Jamaica Plain 30, Mass.
Associated Research, Inc., 3777 W. Belmont, Chicago, Ill.
ATOMATION, INC., 5959 S. Hoover St., Los Angeles 44, Calif. ADV. PG. 256
Baldwin-Lima-Hamilton Corp., Electronics & Instrumation Div., 42 Fourth Ave., Waltham 54, Mass.
Balteau Electric Corp., New & Meadow Sts., Stamford, Conn.
Barnes Development Co., 213 W. Baltimore Pike, Lansdowne, Pa.
Brush Instruments Div. of Clevite Corp., 3405 Perkins Ave., Cleveland 14, Ohio
BUDD CO., NUCLEAR SYSTEMS DIV., 2950 Roberts Ave., Philadelphia 32, Pa. ADV. PG. 187
Buehler, Ltd., 2120 Greenwood St., Evanston, Ill.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Cossor Instruments, Ltd., Cossor House, Highbury Grove, London, N5, England
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Daven Co., The, Route 10, Livingston, N. J.
Dice Co., J. W., Englewood 41, N. J.
Electro Measurements, Inc., 7524 SW Macadam Ave., Portland, Ore.
E.M.I. ELECTRONICS LTD., Hayes, Middlesex England ADV. PG. 236
Engis Equipment Co., 431 S. Dearborn St., Chicago, Ill.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Falk & Co., Ltd., M., Emefco House, Bell St., Reigate (Surrey), England
Gaertner Scientific Corp., 1237 Wrightwood Ave., Chicago, Ill.
Gamma Industrie, 52, Rue de Dunkerque, Paris, France
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
General Radiological Ltd., 15-18 Clipstone St., London, W. 1, England
Gibbs Mfg. Co., N. Main St., Janesville, Wis.
Industrial Engineering Corp., 525 E. Woodbine, Louisville, Ky.
Industrial Instruments, Inc., 89 Commerce Rd., Cedar Grove, N. J.
Industrial Test Equipment Co., 55 E. 11th St., New York 3, N. Y.
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Kearfott Co., Inc., Engineering & Sales Div., 1378 Main Ave., Clifton, N. J.
MAGNAFLUX CORP., 7346 W. Lawrence Ave., Chicago 31, Ill. ADV. PG. 239
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Menlo Research Laboratory, P. O. Box 522, Menlo Park, Calif.
Network Industries Inc., P. O. Box 397, Bayonne, N. J.
New London Instrument Co., P. O. Box 189, New London, Conn.
NORRMAN LABORATORIES, ERNST, Williams Bay, Wis. ADV. PG. 201
Nuclear Engineering Ltd., Woolwich Rd., London S. E. 7, England
Peerless Instrument Co., Inc., 90-15 Corona Ave., Elmhurst 73, N. Y.
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
Philips Electronics, Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y.
Photocon Research Products, 421 N. Altadena Drive, Pasadena, Calif.
Radio City Products Co., Inc., Centre & Glendale Sts., Easton, Pa.
Radio Frequency Labs., Inc., Boonton 2, N. J.
Republic Aviation Corp., Farmingdale, N. Y.
St. John X-Ray Laboratory, Califon, N. J.
Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Servo-Tek Products Co., 1086 Goffle Rd., Hawthorne, N. J.
Simpson Electric Co., Div. of American Gage & Machine Co., 5208 W. Kinzie St., Chicago 44, Ill.
Sperry Products, Inc., Danbury, Conn.
Telectro Industries Corp., 35-16 37th St., Long Island City 1, N. Y.
TEXAS NUCLEAR CORP., Box 9267, Allandale Station, Austin 17, Texas ADV. PG. 205
Thompson-Ramo-Wooldridge Co., The, P. O. Box 45067, Airport Station, Los Angeles 45, Calif.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Waterman Products Co., Inc., 2445-63 Emerald St., Philadelphia 25, Pa.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.

TEST LOOPS

See LOOPS—Test

TESTING—Environmental

See SERVICES

TESTING—Nondestructive

See SERVICES

TETRAFLUOROETHYLENE RODS—SHEETS—TUBES

See also PLASTICS

Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Andrew Co., Otis, 231—233 W. Court St., Cincinnati 2, Ohio
CRANE PACKING CO., 6400 Oakton St., Morton Grove Ill. ADV. PG. 182
Du Pont de Nemours & Co., Inc., Wilmington 98, Del.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Emerson Plastics Corp., 1383 Seabury Ave., Bronx 61, N. Y.
Haveg Industries, Inc., Halocarbon Div., 950 Greenbank Rd., Wilmington 8, Del.
Markel & Sons, L. Frank, School House Lane, Norristown, Pa.
Minneosta Mining & Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.
Polymer Corp., The, Reading, Pa.
Resistoflex Corp., Roseland, N. J.
Rex Corp., The, Hayward Rd., West Acton, Mass.
Sparta Mfg. Co., Div. of U. S. Ceramic Tile Co., Dover, Ohio
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England ADV. PG. 66
Titeflex, Inc., Hendee St., Springfield 4, Mass.
Trio Machine Works, Inc., 3045 N. 3rd St., Philadelphia 33, Pa.
U. S. Gasket Co., Plastics Div. of The Garlock Packing Co., 600 N. 10th St., Camden 1, N. J.

THERMISTORS

Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill.
Carborundum Co., The, Refractories Div., Perth Amboy, N. J.
Fenwal Inc., Pleasant St., Ashland, Mass.
FREIZ INSTRUMENT DIV., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
General Cement Mfg. Co., Div. of Textron, Inc., 400 S. Wyman St., Rockford, Ill.
General Electric Co., Metallurgical Products Dept., 11139 E. Eight Mile Blvd., Detroit 32, Mich.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Keystone Carbon Co., Resistor Div., St. Marys, Pa.
Lewis Engineering Co., 52 Rubber Ave., Naugatuck, Conn.
Minneosta Mining & Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.
Mullard Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
Narda Microwave Corp., The, 118 Herricks Rd., Mineola, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG 86
Simpson Electric Co., Div. of American Gage & Machine Co., 5208 W. Kinzie St., Chicago 44, Ill.
Sperry Gyroscope Div. of Sperry-Rand Corp., Great Neck, N. Y.
Victory Engineering Corp., 77 Springfield Rd., Union, N. J.
Yellow Springs Instrument Co., Inc., P. O. Box 106, Yellow Springs, Ohio

THERMOCOUPLES

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
AERO RESEARCH INSTRUMENT CO., 315 N. Aberdeen St., Chicago 7, Ill. ADV. PG. 217
American Thermo Electric Co., 7269 Santa Monica Blvd., Los Angeles 46, Calif.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill.
Barker Sales Co., 339 S. Broad Ave., Ridgefield, N. J.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Consolidated Controls Corp., Durant Ave., Bethel, Conn.

Dyna-Empire, Inc., 1075 Stewart Ave., Garden City, N. Y.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
ELOMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Fenwal Inc., Pleasant St., Ashland, Mass.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
Gordon Co., Claud S., 619 W. 30th St., Chicago 16, Ill.
Goslin Electric & Mfg. Co., 2921 W. Olive St., Burbank, Calif.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Heraeus GmbH, W. C. 12—14 Heraeusstr., Hanau, Germany
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Huppert Co., K. H., 6830 S. Cottage Grove Ave., Chicago 7, Ill.
Illinois Testing Labs., 420 N. LaSalle St., Chicago, Ill.
J-B-T Instruments, Inc., 133 Hamilton St., New Haven 8, Conn.
LEEDS & NORTHRUP CO., 4970 Stenton Ave., Philadelphia 44, Pa. ADV. PG. 72, 73
Lewis Engineering Co., 52 Rubber Ave., Naugatuck, Conn.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Pacific Transducer Corp., 11836 SW Pico Blvd., Los Angeles 64, Calif.
Perkin-Elmer Corp., Main Ave., Norwalk, Conn.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
PRYO-ELECTRIC, INC., 228 E. James St., Barrington, Ill. ADV. PG. 270
Pyrometer Instrument Co., Inc., Bergenfield, N. J.
Revere Corp. of America, Wallingford, Conn.
Ruge Associates, Inc., Arthur C., 733 Concord Ave., Cambridge 38, Mass.
Simpson Electric Co., Div. of American Gage & Machine Co., 5208 W. Kinzie St., Chicago 44, Ill.
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Thermo Electric Co., Inc., Saddle Brook, N. J.
Thermo Electric Mfg. Co., 465 Huff St., Dubuque, Iowa
Trinity Equipment Corp., P. O. Box 1172, Cortland, N. Y.
Vacuum Tube Products Co., Inc., 2020 Short St., Oceanside, Calif.
West Instrument Corp., 4363 W. Montrose Ave., Chicago 41, Ill.
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.
Winslow Co., Inc., 705 Lehing Ave., P. O. Box 394, Union, N. J.

THERMOMETERS—Bimetallic

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
American Instrument Co. Inc., 8030 Georgia Ave., Silver Spring, Md.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Falk & Co., Ltd., M., Emefco House, Bell St., Reigate (Surrey), England
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
Gordon Co., Claud S., 619 W. 30th St., Chicago 16, Ill.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Kahl Scientific Instrument Corp., P. O. Box 1166, El Cajon, Calif.
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Negretti & Zambra Ltd., 122 Regent St., London, W. 1, England
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Pacific Transducer Corp., 11836 SW Pico Blvd., Los Angeles 64, Calif.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Science Associates, Box 216, 194 Nassau St., Princeton, N. J.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.

THERMONUCLEAR EQUIPMENT

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
GENERAL ATOMIC DIV. OF GENERAL DYNAMICS CORP., P. O. Box 608, San Diego 12, Calif. ADV. PG. 83
Heraeus GmbH, W. C. 12—14 Heraeusstr., Hanau, Germany
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey), England
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

THERMOPILES—Neutron Sensitive

Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany

THERMOSTATS

See also CONTROLS—Temperature

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Burling Instrument Co., Inc., 16 River Rd., Chatham, N. J.
Cox & Co., Inc., 115 E. 23rd St., New York 10, N. Y.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Edison Industries, Thomas A., Instrument Div., West Orange, N. J.
Fasco Industries, Inc., Rochester 2, N. Y.
Fenwal Inc., Pleasant St., Ashland, Mass.
Fielden Electronics Ltd., Paston Rd., Whytenshawe, Manchester, England
General Controls Co., 901 Allen Ave., Glendale 1, Calif.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co., Construction Materials Div., 1285 Boston Ave., Bridgeport 2, Conn.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
H-B Instrument Co., American & Bristol Sts., Philadelphia 40, Pa.
Kahl Scientific Instrument Corp., P. O. Box 1166, El Cajon, Calif.
Mercoid Corp., 4201 Belmont Ave., Chicago 41, Ill.
Metals & Controls Corp., Spencer Thermostat Div., 40 Forest St., Attleboro, Mass.
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis 8, Minn.
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Negretti & Zambra Ltd., 122 Regent St., London, W. 1, England
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Partlow Corp., The, Dept., NDG 58, New Hartford, N. Y.
Powers Regulator Co., The, 3400 Oakton St., Skokie 81, Ill.
RBM Div., Essex Wire Corp., 131 Godfrey, Logansport, Ind.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
ROBERTSHAW-FULTON CONTROLS CO., FULTON SYLPHON DIV., P. O. Box 400, Knoxville 1, Tenn. ADV. PG. 178
Stevens Mfg., Co., Inc., P. O. Annex 1007, Mansfield, Ohio
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Townson & Mercer, Ltd., Croydon, Surrey, England
Ulanet Co., George, 413 Market St., Newark 5, N. J.
Wiegand Co., Edwin L., 7895 Thomas Blvd., Pittsburgh 8, Pa.

THICKNESS GAGES

See GAGES—Thickness or Density, Nonradioactivity
GAGES—Thickness or Density, Radioactivity

TIMERS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Abrams Instrument Corp., 600-620 E. Shiawassee St., Lansing, Mich.
Advanced Products Co., 59 Broadway, North Haven, Conn.
Airpax Products Co., Seminole Div., Fort Lauderdale, Fla.
Alden Electronic & Impulse Recording Equipment Co., Westboro, Mass.
Allegany Instrument Co., Inc., Cumberland, Md.
Amglo Corp., 4333 Ravenswood Ave., Chicago 13, Ill.
ATOMIC ACCESSORIES, Inc., 244—04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
Automatic Timing & Controls, Inc., King of Prussia, Pa.
Allen-Bradley Co., 136 W. Greenfield Ave., Milwaukee 4, Wis
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
Barker & Williamson, Inc., Canal & Beaver, Bristol, Pa.
Belock Instrument Corp., 111—01 14th Ave., College Point, N. Y.
Branson Corp., Jefferson Rd., Whippany, N. J.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Canadian Applied Research, Ltd., 1500 O'Connor Drive, Toronto 16, Ontario, Canada
COLE ELECTRIC CO., 8439 Stellar Drive, Culver City, Calif. ADV. PG. 193
Continental Connector Corp., Div. of DeJur Amsco Corp., Woodside 77, N. Y.
Controls Co. of America, 2450 N. 32nd St., Milwaukee 45, Wis.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Cramer Controls Corp., Box 13, Centerbrook, Conn.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Cutler-Hammer, Inc., 412 N. 12th St., Milwaukee 1, Wis.
DI-AN Controls, Inc., 40 Leon St., Boston 15, Mass.
Eagle Signal Corp., 202 20th St., Moline, Ill.
Electronic Control Corp., 1573 E. Forest Ae., Detroit 7, Mich.
Electronic Engineering Co. of California, 1601 E. Chestnut St., Santa Ana, Calif.
Electronic Processes Corp., 2190 Folsom St., San Francisco 10, Calif.
Ericssons Telephones, Ltd., Instrument Div., High Church St., New Basford, Nottingham, England
Erie Resistor Corp., 639 W. 12th St., Erie, Pa.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Farmer Electric Products Co., Inc., 2300 Washington St., Newton Lower Falls, Mass.
FRIEZ INSTRUMENT DIV., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
General Controls Co., 901 Allen Ave., Glendale 1, Calif.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Photo Products, Inc., 15 Summit Ave., Chatham, N. J.
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
Haydon Co., A. W., The, 232 N. Elm St., Waterbury, Conn.
Hycon-Eastern, Inc., 75 Cambridge Parkway, Cambridge 42, Mass.
Industrial Timer Corp., 1407 McCarter Highway, Newark 4, N. J.
International Register Co., 2620 W. Washington Blvd., Chicago 12, Ill.
ISOTOPE DEVELOPMENTS, LTD., BEENHAM GRANGE, Aldermaston Wharf, nr. Reading, Berks, England ADV. PG. 226
J-B-T Instruments, Inc., 133 Hamilton St., New Haven 8, Conn.
Jordan Electronics, A Div. of The Victoreen Instrument Co., 3025 W. Mission Rd., Alhambra, Calif.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
LaPine & Co., Arthur S., 6001 S. Knox Ave., Chicago 29, Ill.
Leach Corp., 18435 Susana Rd., Compton, Calif.
Liebel-Flarsheim Co., 111 E. Amity Rd., Cincinnati 15, Ohio
Mallory & Co., Inc., P.R., 58 S. Gray St., Indianapolis 6, Ind.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
NUCLEAR-CHICAGO CORP., 229 W. Erie St., Chicago 10, Ill. ADV. PG. 91
Nuclear Research Applications, Ltd., Emefco House, Bell St., Reigate (Surrey) England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
Paragon Electric Co., Two Rivers, Wis.
Patterson Moos Div., Universal Winding Co., 90—28 Van Wyck Expressway, Jamaica 18, N. Y.
Peerless Instrument Co., Inc., 90—15 Corona Ave., Elmhurst 73, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Photovolt Corp., 95 Madison Ave., New Yrok 16, N. Y.
Presin Co., 2014 Broadway, Santa Monica, Calif.
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Radiation Research Corp., 1114 First Ave., New York, N. Y.
Rank Cintel Ltd., Worsley Bridge Rd., London, S.E. 26, England
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
TECHNICAL ASSOCIATES, 140 W. Providencia Ave., Burbank, Calif. ADV. PG. 184
TECHNICAL MEASUREMENT CORP., 441 Washington Ave., North Haven, Conn. ADV. PG. 51
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Tork Time Controls, Inc., 60 MacQuesten Parkway, Mt. Vernon, N. Y.
Trett Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
Ulanet Co., George, 413 Market St., Newark 5, N. J.

Vacuum Tube Products Co., Inc., 2020 Short St., Oceanside, Calif.
Weltronic Co., 19500 W. Eight Mile Rd., Detroit 41, Mich.
Wiegand Co., Edwin L., 7895 Thomas Blvd., Pittsburgh 8, Pa.
Wilson & Co., G. C., 1915 Eighth Ave., Huntington, W. Va.

TISSUE-EQUIVALENT MATERIALS

ATOMIC RESEARCH LABORATORY, 10717 Venice Blvd., Los Angeles 34, Calif. ADV. PG. 237
Markite Corp., 155 Waverly Place, New York 14, N. Y.
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.

TONGS—Handling

See also MANIPULATORS—Remote

Allied Engineering & Production Corp., 242' Blanding Ave., Alameda, Calif.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
ATOMIC ACCESSORIES, INC., 244—04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
GENERAL MILLS, INC., MECHANICAL DIV., NUCLEAR EQUIPMENT DEPT., 1620 Central Ave., N. E. Minneapolis, Minn. ADV. PG. 60, 61
General Radiological, Ltd., 15—18 Clipstone St., London, W. 1, England
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
NRD Instrument Co., A Div. of Nuclear Corp. of Ameria, 9842 Manchester St., St. Louis 19, Mo.
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surrey), England
Nuclear Science Associates, 55 Manor Drive, Newark 6, N. J.
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
TELEFLEX, INC., North Wales, Pa. ADV. PG. 240
Townson & Mercer, Ltd., Croydon, Surrey, England
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.

TRANSDUCERS—Flow

Hays Corp., Michigan City, Ind.
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
Republic Flow Meters Co., 2240 Diversey Parkway, Chicago 47, Ill.
Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Waugh Engineering Co., 7842 Burnet Ave., Van Nuys Calif.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

TRANSDUCERS—Pressure

BJ ELECTRONICS, BORG-WARNER CORP., 3300 Newport Ave., Santa Ana, Calif. ADV. PG. 81
Bourns Laboratories, Inc., 6135 Magnolia Blvd., Riverside, Calif.
Edcliff Instruments, Inc., 1711 S. Mountain Ave., Monrovia, Calif.
Fairchild Controls Corp., Components Div., 225 Park Ave., Hicksville, N. Y.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Hays Corp., Michigan City, Ind.
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
Republic Flow Meters Co., 2240 Diversey Parkway, Chicago 47, Ill.
Statham Instruments, Inc., 12401 W. Olympic Bvd., Los Angees 64, Calf.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

TRANSDUCERS—Temperature

Fenwal Inc., Pleasant St., Ashland, Mass.
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
Trans-Sonics, Inc., P. O. Box 328, Lexington 73, Mass.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

TRANSDUCERS—Ultrasonic

Acoustica Associates, Inc., 26 Windsor Rd., Mineola, N. Y.
Alcar Instruments, Inc., 17 Industrial Ave., Little Ferry, N. J.
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
Arenberg Ultrasonic Lab., Inc., 94 Green St., Jamaica Plain 30, Mass.
Atomic Laboratories, Berkeley, Calif.
BENDIX AVIATION CORP., BENDIX-PACIFIC DIV., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N. J.
Branson Instruments, Inc., 37 Brown House Rd., Stamford, Conn.
BRANSON ULTRASONIC CORP., 1 Brown House Rd., Stamford, Conn. ADV. PG. 217
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Daven Co., The, Route 10, Livingston, N. J.
Dyna-Empire, Inc., 1075 Stewart Ave., Garden City, N. Y.
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
General Ultrasonics Co., 67 Mulberry St., Hartford 3, Conn.
Gulton Industries, Durham Ave., Metuchen, N. J.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Monitor Products Co., 815 Fremont Ave., South Pasadena, Calif.
Mullard Equipment Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
PIONEER-CENTRAL DIV., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Sprague Electric Co., North Adams, Mass.
Ultradyne Engineering Labs., Inc., P. O. Box 8007, Albuquerque, N. M.
Union Elect-Sonics Corp., 111 Penn St., Quincy 69, Mass.

TRANSFORMERS—Constant Voltage

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Acme Electric Corp., 31 Water St., Cuba, N. Y.
Airmec Ltd., High Wycombe, Buckinghamshire, England
Amplifier Corp. of America, 396 Broadway, New York 13, N. Y.
Arnold Magnetics Corp., 4613 W. Jefferson Blvd., Los Angeles 16, Calif.
Baldwin-Lima-Hamilton Corp., Electronics & Instrumentation Div, 42 Fourth Ave., Waltham 54, Mass.
Bogen Co., David, Dept. MHN, P. O. Box 500, Paramus, N. J.
Bush Transformer Corp., 707 North St., Endicott, N. Y.
Central Transformer Co., 910 W. Jackson Blvd., Chicago 7, Ill.
Communication Accessories Co., Lee's Summit, Mo.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
DEL ELECTRONICS CORP., 521 Homestead Ave., Mount Vernon, N. Y. ADV. PG. 241
Electro Engineering Works, 401 Preda St., San Leandro, Calif.
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
Goslin Electric & Mfg. Co., 2921 W. Olive St., Burbank, Calif.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Industrial Transformer Corp., Gouldsboro, Pa.
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Maxson Instruments, 47—37 Austell Place, Long Island City 1, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn 1, N. Y.
Ortho Filter Corp., 198 Albion Ave., Paterson 2, N. J.
Perkin Engineering Corp., 345 Kansas St., El Segundo, Calif.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
Rytron Co., Inc., 7303 Lankershim Blvd., North Hollywood, Calif.
Sola Electric Co., 4633 W. 16th St., Chicago 50, Ill.
Standard Electronics Div. of Radio Engineering Labs., Inc., 29—01 Borden Ave., Long Island City 1, N. Y.
Sterling Transformer Corp., 297 N. Seventh St., Brooklyn 11, N. Y.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thordarson-Meissner Mfg. Div., Mt. Carmel, Ill.
Transonic, Inc., 808 16th St., Box 59, Bakersfield, Calif.
United Transformer Corp., 150 Varick St., New York 13, N. Y.
Utrad, Inc., 305 N. Briant St., Huntington, Ind.

TRANSFORMERS—Differential

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Arnold Magnetics Corp., 4613 W. Jefferson Blvd., Los Angeles 16, Calif.
Atlas Engineering Co., 176 Blue Hill Ave., Roxbury, Mass.
Automatic Timing & Controls, Inc., King of Prussia, Pa.
Collins Corp., G. L., 2820 Hullett St., Long Beach, Calif.
Communication Accessories Co., Lee's Summit, Mo.
Constantine Engineering Laboratories Co., 70 Island Ave., Mahwah, N. J.
Edcliff Instruments, Inc., 1711 S. Mountain Ave., Monrovia, Calif.
Electro Engineering Works, 401 Predo St., San Leandro, Calif.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
Fielden Electronics, Ltd., Paston Rd., Whytenshawe, Manchester, England
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Industrial Transformer Corp., Gouldsboro, Pa.
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Minneapolis-Honeywell Boston Div., 40 Life St., Boston 35, Mass.
New York Transformer Co., Inc., Third Ave., Alpha, N. J.
Ortho Filter Corp., 198 Albion Ave., Paterson 2, N. J.
Polyphase Instrument Co., East 4th St., Bridgeport, Pa.
Sanborn Co., Industrial div., 175 Wyman St., Waltham 54, Mass.
Schaevitz Engineering, P. O. Box 505, Camden 1, N. J.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thordarson-Meissner Mfg. Div., Mount Carmel, Ill.
Tresco, Inc., 3824 Terrace St., Philadelphia 28, Pa.
Utrad, Inc., 305 N. Briant St., Huntington, Ind.
Varo Mfg. Co., Inc., 2201 Walnut St., Garland, Texas

TRANSFORMERS—Power

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Acme Electric Corp., 31 Water St., Cuba, N. Y.
Airpax Products Co., Seminole Div., Fort Lauderdale, Fla.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
Amplifier Corp. of America, 396 Broadway, New York 13, N. Y.
Arnold Magnetics Corp., 4613 W. Jefferson Blvd., Los Angeles 16, Calif.
Atlas Engineering Co., 176 Blue Hill Ave., Roxbury, Mass.
Beta Electric Corp., a Div. of Sorensen Co., Inc., Richards Ave., South Norwalk, Conn.
Bush Transformer Corp., 707 North St., Endicott, N. Y.
Central Transformer Co., 910 W. Jackson Ave., Chicago, Ill.
Communication Accessories Co., Lee's Summit, Mo.
Constantine Engineering Laboratories Co., 70 Island Ave., Mahwah, N. J.
DEL ELECTRONICS CORP., 521 Homestead Ave., Mount Vernon, N. Y. ADV. PG. 241
E S C Corp., 534 Bergen Blvd., Palisades Park, N. J.
Edko Electronics Engineering Co., 202 Grand St., Brooklyn 11, N. Y.
Eisler Engineering Co., 760 S. 13th St., Newark 3, N. J.
Elcor, Inc., Box 354, McLean, Va.
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N. Y.
Freed Transformer Co., Inc., 1736 Weirfield St., Brooklyn 27, N. Y.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Goslin Electric & Mfg. Co., 2921 W. Olive St., Burbank, Calif.
Grand Transformers, Inc., Marian & Beech Tree Sts., Grand Haven, Mich.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Industrial Transformer Corp., Gouldsboro, Pa.
K-V Transformer Corp., 20 E. Franklin St., Danbury, Conn.
Keystone Products Co., 904—6 23rd St., Union City, N. J.
King Electric Equipment Co., 9123 Inman Ave., Cleveland 5, Ohio
Knopp, Inc., 1307 66th St., Emeryville 8, Calif.
Lindberg Engineering Co., 2450 W. Hubbard St., Chicago 12, Ill.
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Magnatran, Inc., P. O. Box 211, Kearny, N. J.
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. J.
Maxson Instruments 47—37 Austell Place, Long Island City 1, N. Y.
Melco Products, Inc., 301 Fifth Ave., South Minneapolis, Minn.
Minitran Corp., 5 Oliver St., Newark 2, N. J.
Maloney Electric Co., 5390 Bircher Blvd., St. Louis 20, Mo.
New York Transformer Co., Inc., Third Ave., Alpha, N. J.
Nothelfer Winding Labs., 5 Albermarle Ave., Trenton 8, N. J.
Ortho Filter Corp., 198 Albion Ave., Paterson 2, N. J.
Perkin Engineering Corp., 345 Kansas St., El Segundo, Calif.
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35

Polyphase Instrument Co., East 4th St., Bridgeport, Pa.
Raypar, Inc., 7800 W. Addison St., Chicago 34, Ill.
Rytron Co., Inc., 7303 Lankershim Blvd., North Hollywood, Calif.
Sanford Miller Co., 691 Bedford Ave., Brooklyn 6, N. Y.
Sorensen & Co., Inc., Richards Ave., South Norwalk, Conn.
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
Sperry Gyroscope Div. of Sperry-Rand Corp., Great Neck, N. Y.
Standard Electronics Div. of Radio Engineering Labs., Inc., 29—01 Borden Ave., Long Island City 1, N. Y.
Sterling Transformer Corp., 297 N. Seventh St., Brooklyn 11, N. Y.
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Thordarson-Meissner Mfg. Div., Mt. Carmel, Ill.
Transformers, Inc., 200 Stage Rd., Vestal, N. Y.
Transonic, Inc., 808 16th St., Box 59, Bakersfield, Calif.
Tresco, Inc, 3824 Terrace St., Philadelphia 28, Pa.
Triad Transformer Corp., 4055 Redwood Ave., Venice, Calif.
United Transformer Corp., 150 Varick St., New York 13, N. Y.
Utrad, Inc., 305 N. Briant St., Huntington, Ind.
Varo Mfg. Co., Inc., 2201 Walnut St., Garland, Texas
Wagner Electric Co., 6400 Plymouth Ave., St. Louis 14, Mo.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10
Wheeler Electronic Corp., Sub. of Sperry Rand Corp., 150 E. Aurora St., Waterbury 20, Conn.

TRANSFORMERS—Pulse

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Acme Electric Corp., 31 Water St., Cuba, N. Y.
Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.
Airpax Products Co., Seminole Div., Fort Lauderdale, Fla.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
Arnold Magnetics Corp., 4613 W. Jefferson Blvd., Los Angeles 16, Calif.
Atlas Engineering Co., 176 Blue Hill Ave., Roxbury, Mass.
Barker & Williamson, Inc., Canal & Beaver, Bristol, Pa.
Berkshire Laboratories, 588 Bank Village, Greenville, N. H.
Brew & Co., Inc., Richard D., Airport Rd., Box 339, Concord, N. H.
Communication Accessories Co., Lee's Summit, Mo.
Constantine Engineering Laboratories Co., 70 Island Ave., Mahwah, N. J.
Dumont Labs., Inc., Allen B., 760 Bloomfield Ave., Clifton, N. J.
E S C Corp., 534 Bergen Blvd., Palisades Park, N. J.
Freed Transformer Co., Inc., 1736 Weirfield St., Brooklyn 27, N. Y.
Goslin Electric & Mfg. Co., 2921 W. Oliver St., Burbank, Calif.
Gudeman Co., 340 W. Huron St., Chicago 10, Ill.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Industrial Transformer Corp., Gouldsboro, Pa.
K-V Transformer Corp., 20 E. Franklin St., Danbury, Conn.
Keystone Products Co., 904—6 23rd St., Union City, N. J.
Knopp, Inc., 1307 6th St., Emeryville 8, Calif.
LEVINTHAL ELECTRONIC PRODUCTS, INC., Stanford Industrial Park, Palo Alto, Calif. ADV. PG. 225
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Magnetics Research Co., Inc., 255 Grove St., White Plains, N. Y.
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Maxson Instruments, 47—37 Austell Place, Long Island City 1 ,N. Y.
Melco Products, Inc., 301 Fifth Ave., South Minneapolis, Minn.
Minitran Corp., 5 Oliver St., Newark 2, N. J.
Moloney Electric Co., 5390 Bircher Blvd., St. Louis 20, Mo.
New York Transformer Co., Inc., Third Ave., Alpha, N. J.
Nothelfer Winding Labs., 5 Albermarle Ave., Trenton 8, N. J.
Ortho Filter Corp., 198 Albion Ave., Paterson 2, N. J.
PCA Electronics, Inc., 16799 Schoenborn St., Sepulveda, Calif.
Perkin Engineering Corp., 345 Kansas St., El Segundo, Calif.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Polyphase Instrument Co., East 4th St., Bridgeport, Pa.
Pulse Engineering, 2657 Spring St., Redwood City, Calif.
RS Electronics Corp., 435 Portage Ave., Palo Alto, Calif.
Redman Electronics Corp., P. O. Box 72, Thompsonville, Conn.
Rytron Co., Inc., 7303 Lankershim Blvd., North Hollywood, Calif.
Scientific Engineering Laboratory, 1510 6th St., Berkeley 10, Calif.
Sperry Gyroscope Div. of Sperry-Rand Corp., Great Neck, N. Y.
Sprague Electric Co., North Adams, Mass.
Standard Electronics Div. of Radio Engineering Labs., Inc., 29—01 Borden Ave., Long Island City 1, N. Y.
Technitrol Engineering Corp., Emerald St. & Allegheny Ave., Philadelphia 34, Pa.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Thordarson-Meissner Mfg. Div., Mt. Carmel, Ill.
Transformers, Inc., 200 Stage Rd., Vestal, N. Y.
Triad Transformer Corp., 4025 Redwood Ave., Venice, Calif.
Transonic, Inc., 808 16th St., Box 59, Bakersfield, Calif.
United Transformer Corp., 150 Varick St., New York 13, N. Y.
Utrad, Inc., 305 N. Briant St., Huntington, Ind.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10
Wheeler Electronic Corp., Sub. of Sperry Rand Corp., 150 E. Aurora St., Waterbury 20, Conn.

TRANSFORMERS—Variable

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Acme Electric Corp., 31 Water St., Cuba, N. Y.
Airmec, Ltd., High Wycombe, Buckinghamshire, England
Airpax Products Co., Seminole Div., Fort Lauderdale, Fla.
Arnold Magnetics Corp., 4613 W. Jefferson Blvd., Los Angeles 16, Calif.
Atlas Engineering Co., 176 Blue Hill Ave., Roxbury, Mass.
Automatic Timing & Controls Inc., King of Prussia, Pa.
Barker & Williamson, Inc., Canal & Beaver, Bristol, Pa.
Communication Accessories Co., Lee's Summit, Mo.
E S C Corp., 534 Bergen Blvd., Palisades Park, N. J.
Eder Instrument Co., Inc., 2293 N. Clybourn Ave., Chicago 14, Ill.
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
Knopp, Inc., 1307 66th St., Emeryville 8, Calif.
Lindberg Engineering Co., 2450 W. Hubbard St., Chicago 12, Ill.
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Melco Products, Inc., 301 Fifth Ave., South Minneapolis, Minn.
Minitran Corp., 5 Oliver St., Newark 2, N. J.
Nothelfer Winding Labs., 5 Albermarle Ave., Trenton 8, N. J.
Ohmite Mfg. Co., 3601 Howard St., Skokie, Ill.
Ortho Filter Corp., 198 Albion Ave., Paterson 2, N. J.
PCA Electronics, Inc., 16799 Schoenborn St., Sepulveda, Calif.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Raytheon Mfg. Co., Nuclear Power Group, 28 Seyon St., Waltham 54, Mass.
Rytron Co., Inc., 7303 Lankershim Blvd., North Hollywood, Calif.
Standard Electronics Div. of Radio Engineering Labs., Inc., 29—01 Broden Ave., Long Island City 1, N. Y.
Superior Electric Co., 83 Laurel St., Bristol, Conn.
Telectro Industries Corp., 35—16 37th St., Long Island City 1, N. Y.
Thordarson-Meissner Mfg. Div., Mt. Carmel, Ill.
United Transformer Co., 150 Varick St., New York 13, N. Y.
Wagner Electric Co., 6400 Plymouth Ave., St. Louis 14, Mo.

TRANSISTORS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Alloys Unlimited, Inc., 44-13 Vernon Blvd., Long Island City 1, N. Y.
Amperex Electronic Corp., 230 Duffy Ave., Hicksville, N. Y.
CBS-Hytron, A Div. of Columbia Broadcasting System, Inc., 100 Endicott St., Danvers, Mass.
Clevite Transistor Products, A Div. of the Clevite Corp., 241—257 Crescent St., Waltham 54, Mass.
Fairchild Semiconductor Corp., 844 Charleston Rd., Palo Alto, Calif.
General Electric Co., Semiconductor Products Dept., Electronics Park, Syracuse, N. Y.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
GENERAL TRANSISTOR CORP., 91—27 138th Place, Jamaica 35, N. Y. ADV. PG. 165
Goslin Electric & Mfg. Co., 2921 W. Olive St., Burbank, Calif.
Hughes Products, Airport Station, Los Angeles 45, Calif.
Industro Transistor Corp., 35—10 36th Ave. Long Island City 6, N. Y.
Kellogg Switchboard & Supply Co., IT&T Div., 6650 S. Cicero Ave., Chicago 38, Ill.
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Motorola, Inc. Semiconductor Products Div., 5005 E. McDowell Rd., Phoenix, Ariz.
Mullard Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
Philco Corp., Lansdale Tube Co., Lansdale, Pa.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
RADIO CORPORATION OF AMERICA, TUBE DIV., 415 S. Fifth St., Harrison, N. J. ADV. PG. 170
Raytheon Mfg. Co., Semiconductor Div., 215 First Ave., Needham Heights, Mass.
RED BANK DIV., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Sperry Gyroscope Div. of Sperry-Rand Corp. Great Neck, N. Y.
Sprague Electric Co., North Adams, Mass.
Sylvania Electric Products, Inc., Semiconductor Div., Woburn, Mass.
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas
Transitron Electronics Corp., 168 Albion St., Wakefield, Mass.
Tung Sol Electric, Inc., 95 Eighth Ave., Newark 4, N. J.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

TRAPS—Liquid Metal

Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
LIQUID METALS, INC., Box 266, Westford, Mass. ADV. PG. 233
M S A Research Corp., Callery, Pa.
Squires Co., C. E., 18805 Syracuse Ave., Cleveland 10, Ohio
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

TRAPS—Steam

Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Anderson Co., D. V., Div. of International Basic Economy Corp., 1935 W. 96th St., Cleveland 2, Ohio
Babcock & Wilcox Ltd., Babcock House, 209 Euston Rd., London N. W. 1, England
Clark Mfg. Co., 1830 E. 38th St., Cleveland 14, Ohio
Kay & MacDonald, Inc., 11—15 Central Ave., West Orange, N. J.
Leavitt Machine Co., The, 10 E. River St., Orange, Mass.
Powers Regulator Co., The, 3400 Oakton St., Skokie 81, Ill.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
Sarco Co., Inc., 350 Fifth Ave., New York 1, N. Y.
Squires Co., C. E., 18805 Syracuse Ave., Cleveland 10, Ohio
Trane Co., The, LaCrosse, Wis.
Yarnall-Waring Co., Chestnut Hill, Philadelpia 18, Pa.

TUBE FITTINGS

See PIPE FITTINGS

TUBES—Electron

See also GEIGER-MULLER TUBES

a. Beam Switching
b. Cathode Ray
c. Cold Cathode, Special Purpose
d. Electrometer
e. Glow Transfer
f. Ignitron
g. Microwave
h. Photomultiplier
i. Power
k. Rectifying
l. Thyratron
m. Voltage Regulating
n. X-Ray

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany b-c-f-g-i-j-k-l-m-n
Amglo Corp., 4333 Ravenswood Ave., Chicago 13, Ill. c
Amperex Electronic Corp., 230 Duffy Ave., Hicksville N. Y. a-c-f-g-h-i-j-k-l-m-n
ANTON ELECTRONIC LABS., INC., 1226—38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106 . . m
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101 g-n
Atomic Laboratories, Berkeley, Calif. n
BAIRD-ATOMIC, INC., 33 University Rd., Cambridge 38, Mass. ADV. PG. 67-70 e
Barker Sales Co., 339 S. Broad Ave., Ridgefield, N. J. b-c-d-e
Bomac Laboratories, Inc., Salem Rd., Beverly, Mass. g
Burroughs Corp., Electronic Tube Div., P. O. Box 1226, Plainfield, N. J. a
CBS-Hytron, A Div. of Columbia Broadcasting System, Inc., 100 Endicott St., Danvers, Mass. b-c-h-i-j-k-l-m
Cascade Research Corp., 33 Victory Lane, Los Gatos, Calif. g

Central Electronic Mfrs., 2 Richwood Place, Denville, N. J. g-l-k
Cossor Instruments, Ltd., Cossor House, Highbury Grove, London, N5, England b-j-k
Diamond Antenna & Microwave Corp., 7 North Ave., Wakefield, Mass. g
Dumont Labs., Inc., Allen B., 7-60 Bloomfield Ave., Clifton, N. J. b-c-h
Edgerton, Germeshausen & Grier, Inc., 160 Brookline Ave., Boston 15, Mass. b
Eitel-McCullough, Inc., 301 Industrial Way, San Carlos, Calif. a-g-i-j-k
E.M.I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236 b-g-h
Electronic Products Co., 11 E. Third St., Mount Vernon, N. Y. c-m
Electronic Tube Corp., 1200 E. Mermaid Lane, Philadelphia 18, Pa. a-b
Electrons, Inc., 127 Sussex Ave., Newark 3, N. J. i-k-l
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England g
Ericssons Telephones, Ltd., Instrument Div., High Church St., New Basford, Nottingham, England a-c-e-m
Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N. Y. b-c-d-g-n
Geisler Laboratories, P. O. Box 252, Menlo Park, Calif. g
General Electric Co., Electronic Components Div., Owensboro, Ky. i-k-l
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2 a-b-c-d-g-i-j-k-l-m-n
General Radiological, Ltd., 15—18 Clipstone St., London, W. 1, England n
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England g-n
Huggins Laboratories, Inc., 999 E. Arques Rd., Sunnyvale, Calif. g
Hughes Products, Airport Station, Los Aegnies 45, Calif. b-g
ITT Components Div., International Telephone & Telegraph Corp., P. O. Box 412, Clifton, N. J. g-i-k
Industrial Tubes, Inc., 321 Stevens St., Geneva, Ill. k-l
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass. h
Kip Electronics Corp., 29 Holly Place, Box 562, Stamford, Conn. c-e-j-l
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif. b-c-g-i-j-l
Macbeth Instrument Corp., Little Britain Rd., Newburgh, N. Y. h
Machlett Laboratories, Inc., 1063 Hope St., Springdale, Conn. b-g-i-k-n
Menlo Research Laboratory, P. O. Box 522, Menlo Park, Calif. c
Microwave Associates, Inc., Burlington, Mass. g
Mullard Ltd., Mullard House, Torrington Pl., London, W. C. 1, England b-c-d-e-g-h-i-j-k-l-m-n
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo. h
National Union Electric Corp., Electronics Div., Bloomington, Ill. a-b-m
Nuclear Corp. of America Inc., 400 Park Ave., New York 17, N. Y. d-i-k-m
Philco Corp., Lansdale Tube Co., Lansdale, Pa. b-c-i-j-l-m
Philips Electronics, Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y. n
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86 a-b-c-d-f-g-h-i-j-k-l-m-n
Phoenix Precision Instrument Co., 380-305 N. Fifth St. Philadelphia Pa. h
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35 n
Polarad Electronics Corp., 43—20 34th St., Long Island City 1, N. Y. g
RADIO CORPORATION OF AMERICA, TUBE DIV., 415 S. Fifth St., Harrison, N. J. ADV. PG. 170 b-c-f-g-h-i-j-k-l-m
Rank Cintel Ltd., Worsley Bridge Rd., London, S. E. 26, England b-h
Raytheon Mfg. Co., Industrial Tube Div., 55 Chapel St., Newton, Mass. b-c-d-i-k-m
Raytheon Mfg. Co., Receiving Tube Div., 55 Chapel St., Newton 58, Mass. j
RED BANK DIV., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145 c-g-j-k-l-m
Resitron Laboratories Inc., 2908 Nebraska Ave., Santa Monica, Calif. b-d-i-k-n
Reuter-Stokes Electronics Components, Inc., 2149 Hamilton Ave., Cleveland 14, Ohio c
Sperry Gyroscope Div. of Sperry-Rand Corp., Great Neck, N. Y. g
Sylvania Electronic Systems Div. of Sylvania Electric Products Inc., 100 First Ave., Waltham 54, Mass. g
Sylvania Electronic Tubes, a Div. of Sylvania Electric Products Inc., Emporium, Pa. b-f-j-l
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157 d
Tung-Sol Electric, Inc., 95 Eighth Ave., Newark 4, N. J. b-c-e-i-j-k-l-m
Twentieth Century Electronics Ltd., Centronics Works, King Henry's Drive, New Addington, Surrey, England b-h
Vacuum Tube Products Co., Inc., 2020 Short St., Oceanside, Calif. a-b-k-l
Varian Associates, 611 Hansen Way, Palo Alto, Calif. g-l
VICTOREEN INSTRUMENT CO., 5800-11 Hough Ave., Cleveland 3, Ohio ADV. PG. 196, 202, 203 c-d-m
Waterman Products Co., Inc., 2445—63 Emerald St., Philadelphia 25, Pa. b
WESTINGHOUSE ELECTRIC CORP., P O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7—10 f
Westinghouse Electric Corp., Electronic Tube Div., Box 284, Elmira, N. Y. b-f-g-i-j-k-l
X-Ray Dept. of General Electric Co., 4855 Electric Ave., Milwaukee, Wis. k-n

TUBING—Carbon

Morganite, Inc., 33—02 48th Ave., Long Island City 1, N. Y.
NATIONAL CARBON CO., DIV. OF UNION CARBIDE CORP., 30 E. 42nd St., New York 17, N. Y. ADV. PG. Fourth Cover
Phoenix Steel Tube Div. of Phoenix Iron & Steel Co., Phoenixville, Pa.
U. S. PIPE & FOUNDRY CO., STEEL & TUBES DIV., Burglington, N. J. ADV. PG. 14, 15

TUBING—Ceramic

Alite Div. of U. S. Stoneware Co., P. O. Box 119, Orville, Ohio
American Lava Corp., Titania Div., Manufacturers Rd., Chattanooga 5, Tenn.
Carborundum Co., The, Refractories Div., Perth Amboy, N. J.
Centralab Div. of Globe-Union, Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Du-Co Ceramics Co., Box 587, Butler 8, Pa.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
Erie Resistor Corp., 639 W. 12th St., Erie, Pa.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
General Ceramics Corp., 250 Crows Mills Rd., Keasbey, N. J.
Isolantite Mfg. Corp., Stirling, N. J.
Gladding, McBean & Co., 2901 Los Feliz Blvd., Los Angeles 39, Calif.
Kirchberger & Co., Inc., M., 82—92 W. Forest Ave., Englewood, N. J.
Laboratory Equipment Corp., St. Joseph, Mich.
Lapp Insulator Co., Inc., 40 Gilbert St., Leroy, N. Y.
Minnesota Mining & Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.
Mitronics, Inc., 1290 Central Ave., Hillside, N. J.
Morganite, Inc., 33—02 48th Ave., Long Island City 1, N. Y.
NATIONAL BERYLLIA CORP., 4501 Dell Ave., North Bergen, N. J. ADV. PG. 254
NORTON CO., 1 New Bond St., Worcester 6, Mass. ADV. PG. 77
Steward Mfg. Co., D. M., E. 36th St., Chattanooga Ave., Waltham 54, Mass.
Saxonburg Ceramics, Saxonburg, Pa.
Steward Mfg. Co., D. M., E. 36th St., Chattanooga 1, Tenn.
U. S. Stoneware Co., Akron 9, Ohio

TUBING—Glass

Bache & Co., Semon, 636 Greenwich St., New York 14, N. Y.
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Fish-Schurman Corp., 75 Portman Rd., New Rochelle, N. Y.
Glass Engineering Laboratories, 601 O'Neil Ave., Belmont, Calif.
HARSHAW CHEMICAL CO. 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Laboratory Equipment Corp., St. Joseph, Mich.
Mitronics, Inc., 1290 Central Ave., Hillside, N. J.
Phoenix Precision Instrument Co., 3803—05 North 5th St., Philadelphia, Pa.
Stillman Rubber Co., 5811 Marilyn Ave., Culver City, Calif.
Tenso-Lab Inc., South Buckhout St., Irvington-on-Hudson, N. Y.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England
Tronex Inc., 10th & G Sts., Millville, N. J.

TUBING—Hard-Rubber

Andrew Co., Otis, 231—233 W. Court St., Cincinnati 2, Ohio
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Garlock Packing Co., The, Palmyra, N. Y.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Luzerne Rubber Co., Muirhead Ave., Trenton, N. J.
Roberts Toledo Rubber Co., 4143 Monroe St., Toledo 13, Ohio
Vanton Pump & Equipment Corp., 201 Sweetland Ave., Hillside, N. J.

TUBING—Metal

Aeroquip Corp., Jackson, Mich.
Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
Aluminum Co. of America, Alcoa Bldg., Pittsburgh 19, Pa.
American Blower Div., American Radiator & Standard Corp., 8111 Tireman Ave., Dearborn, Mich.
American Brass Co., Waterbury 20, Conn.
American Silver Co., 36—07 Prince St., Flushing 54 N. Y.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Armco Steel Corp., Middletown, Ohio
Autoclave Eng. Sales Corp., 2930 W. 22nd St., Erie, Pa.
Babcock & Wilcox Co., Tubular Products Div., Beaver Falls, Pa.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn 7 N. Y.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bishop & Co., J., Platinum Works, Malvern, Pa.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Chase Brass & Copper Co., Inc., 236 Grand St., Waterbury 20, Conn.
Crucible Steel Co. of America, Dept. N.B.G., Box 2518 Pittsburgh 30, Pa.
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
FANSTEEL METALLURGICAL CORP., North Chicago, Ill. ADV. PG. 172
Flexonics Corp., 1315 S. Third Ave., Maywood, Ill.
Flori Pipe Co., 5700 Bulwer Ave., St. Louis, Mo.
GRISCOM-RUSSELL CO., SUB. OF GENERAL PRECISION EQUIPMENT CORP., Massillon, Ohio ADV. PG. 98
HARVEY ALUMINUM, 19200 S. Western Ave., Torrance, Calif. ADV. PG. 59
Haynes Stellite Co., Div. of Union Carbide Corp. 30 E. 42nd St., New York, N. Y.
Heatron, Inc., 333 Eberts Lane, York, Pa.
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany
INTERNATIONAL NICKEL CO., INC., 67 Wall St., New York 5, N. Y. ADV. PG. 114
Kennametal, Inc., Latrobe, Pa.
Knapp Mills Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
Mackenzie Walton Corp., 478 Pawtucket Ave., Pawtucket, R. I.
Metals & Controls Corp., General Plate Div., 40 Forest Ave., Attleboro, Mass.
Midwest Piping Co., Inc., 1450 S. 2nd St., St Louis 3, Mo.
National Lead Co., 111 Broadway, New York 6, N. Y.
Nuclear Metals, Inc., Concord, Mass.
Penn Fibre & Specialty Co., 2020 E. Westmoreland St., Philadelphia 34, Pa.
PERFECTION MICA CO., MAGNETIC SHIELD DIV., 1322 N. Elston Ave., Chicago 22, Ill. ADV. PG. 234
Phelps Dodge Copper Products Corp., 300 Park Ave., New York 22, N. Y.
Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio
Revere Copper & Brass, Inc., 230 Park Ave., New York 17, N. Y.
Ryerson & Son, Inc. Joseph T., P. O. 8000-A, Chicago 80, Ill.
Scovill Mfg. Co., Mills Div., 99 Mill St., Waterbury 20, Conn.
Smith Tube Corp., Ridgewood, N. J.
SUPERIOR TUBE CO., Box 191, Norristown, Pa. ADV. PG. 71
T. I. NUCLEAR ENGINEERING LTD., The Adephi, London, W. C. 2, England ADV. PG. 86
Titanium Metals Corp. of America, 233 Broadway, New York 7, N. Y.
Titeflex Inc., Kendee St., Springfield 4, Mass.
TUBE METHODS INC., Bridgeport, Pa. ADV. PG. 168
Tube Reducing Corp., 520 Main Ave., Wallington, N. J.
U. S. PIPE & FOUNDRY CO., STEEL & TUBES DIV., Burlington, N. J. ADV. PG. 14, 15
Wiegand Co., Edwin L., 7895 Thomas Blvd., Pittsburgh 8, Pa.
Wolverine Tube Div. of Calumet & Hecla, Inc., 17200 Southfield Rd., Allen Park, Mich.

TUBING—Plastic

Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Allied Resinous Products Inc., Box 620, Conneaut, Ohio
American Agile Corp., P. O. Box 168, Bedford, Ohio
Anchor Plastics Co., Inc., 36—36 36th St., Long Island City 6, N. Y.
Andrew Co., Otis, 231—233 W. Court St., Cincinnati 2, Ohio
Auburn Mfg. Co., 500 Stack St., Middletown, Conn.
Borden Chemical Co., A Div. of The Borden Co., 350 Madison Ave., New York 17, N. Y.
Clay-Adams Co., 141 E. 25th St., New York 10, N. Y.
CONNEAUT RUBBER & PLASTIC CO., DIV. OF U. S. STONEWARE CO., Commerce St., Conneaut, Ohio ADV. PG. 97
Continental-Diamond Fibre Corp., Newark, Delaware
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Evans Pipe Co., The, 23 New Port Ave., Uhrichsville, Ohio

Flexonics Corp., 1315 S. Third Ave., Maywood, Ill.
Garlock Packing Co., Palmyra, N. Y.
General Cement Mfg. Co., Div. of Textron, Inc., 400 S. Wyman St., Rockford, Ill.
General Electric Co., Laminated Products Dept., Coshocton, Ohio
General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50, Pa.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Haveg Industries, Inc., Halocarbon Div., 950 Greenbank Rd., Wilmington 8, Del.
Hitemp Wires, Inc., 26 Windsor Ave., Mineola, N. Y.
Houghton Laboratories, Inc., Houghton Ave., Olean, N. Y.
Imperial Brass Mfg. Co., 6300 W. Harrison St., Chicago 7, Ill.
Industrial Plastic Fabricators, Endicott St., Norwood, Mass.
Knapp Mills, Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
Luzerne Rubber Co., Muirhead Ave., Trenton, N. J.
Markel & Sons, L. Frank, School House Lane, Norristown, Pa.
Mica Insulator Div. of Minnesota Mining & Mfg. Co., 797 Broadway, Schenectady 1, N. Y.
Minnesota Mining & Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.
National Vulcanized Fibre Co., Wilmington 99, Del.
Polymer Corp., The, Reading, Pa.
Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio
Resdel Corp., P. O. Box 217, Rio Grande, N. J.
Resistoflex Corp., Roseland, N. J.
Richardson Company, The, 2775 Lake St., Melrose Park, Ill.
Ryerson & Son, Inc., Joseph T., P. O. 8000-A, Chicago 80, Ill.
Shamban & Co., W. S., 11617 W. Jefferson Blvd., Culver City, Calif.
Sparta Mfg. Co., Div. of U. S. Ceramic Tile Co., Dover, Ohio
Stillman Rubber Co., 5811 Marilyn Ave., Culver City, Calif.
Synthane Corp., River Rd., Oaks, Pa.
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England ADV. PG. 66
Titeflex Inc., Hendee St., Springfield 4, Mass.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England
U. S. Gasket Co., Plastics Div. of The Garlock Packing Co., 600 N. 10th St., Camden 1, N. J.
U. S. Stoneware Co., Akron 9, Ohio
Vanton Pump & Equipment Corp., 201 Sweetland Ave., Hillside, N. J.
Yonkers Industrial Plastic Products Co., 137 Sawmill River Rd., Yonkers, N. Y.
Zippertubing, Inc., 752 S. San Pedro St., Los Angeles 14, Calif.

TUBING—Rubber

Aeroquip Corp., Jackson, Mich.
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Andrew Co., Otis, 231—233 W. Court St., Cincinnati 2, Ohio
Auburn Mfg. Co., 500 Stack St., Middletown, Conn.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Clay-Adams Co., 141 E. 25th St., New York 10, N. Y.
Connecticut Hard Rubber Co., New Haven 9, Conn.
Flexonics Corp., 1315 S. Third Ave., Maywood, Ill.
Garlock Packing Co., Palmyra, N. Y.
General Electric Co., Lamp Wire & Phosphors Dept., 21800 Tungsten Rd., Cleveland 17, Ohio
General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50, Pa.
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Minnesota Mining & Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.
Research Vacuum Supply Co., 6712 N. Clark St., Chicago, Ill.
Roberts Toledo Rubber Co., 4143 Monroe St., Toledo 13, Ohio
Stillman Rubber Co., 5811 Marilyn Ave., Culver City, Calif.
Tenso-Lab Inc., South Buckhout St., Irvington-on-Hudson, N. Y.
Towers & Co., Ltd., J. W., Victoria House, Widnes, Lancs., England
Vanton Pump & Equipment Corp., 201 Sweetland Ave., Hillside, N. J.
Zippertubing, Inc., 752 S. San Pedro St., Los Angeles 14, Calif.

TUBING—Seamless, Stainless Steel

Aeroquip Corp., Jackson, Mich.
ALLEGHENY LUDLUM STEEL CORP., Oliver Bldg., Room 2020, Pittsburgh 22, Pa. ADV. PG. 109
All-Stainless Inc., 40 Rugg Rd., Allston 34, Mass.
American Cast Iron Pipe Co., Special Products Div., 2930 N. 16th St., Birmingham, Ala.
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
American Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Autoclave Eng. Sales Corp., 2930 W. 22nd St., Erie, Pa.
Babcock & Wilcox Co., Tubular Products Div., Beaver Falls, Pa.
Bishop & Co., J., Platinum Works, Malvern, Pa.
Bram Metallurgical-Chemical Co., 20 65th Ave., Philadelphia 26, Pa.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
Chase Brass & Copper Co., Inc., 236 Grand St., Waterbury 20, Conn.
Crucible Steel Co. of America, Dept. N.B.G., Box 2518, Pittsburgh 30, Pa.
CURTISS-WRIGHT CO., METAL PROCESSING DIV., 760 Northland Ave., Buffalo, N. Y. ADV. PG. 107
ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave., Portland 10, Ore. ADV. PG. 175
Knapp Mills, Inc., 23—15 Borden Ave., Long Island City 1, N. Y.
Pittsburgh Piping & Equipment Co., 158 49th St., Pittsburgh, Pa.
Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio
Revere Copper & Brass, Inc., 230 Park Ave., New York 17, N. Y.
SANDUSKY FOUNDRY & MACHINE CO., W. Market St., Sandusky, Ohio ADV. PG. 147
Smith Tube Corp., Ridgewood, N. J.
SUPERIOR TUBE CO., Box 191, Norristown, Pa. ADV. PG. 71
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London W. C. 2, England ADV. PG. 66
Titeflex, Inc., Hendee St., Springfield 4, Mass.
TUBE METHODS, INC., Bridgeport, Pa. ADV. PG. 168
Tube Reducing Corp., 520 Main Ave., Wallington, N. J.
U. S. PIPE & FOUNDRY CO., STEEL & TUBES DIV., Burlington, N. J. ADV. PG. 14, 15
Wall Tube & Metal Products Co., P. O. Box 330, Newport, Tenn.
WISCONSIN STAINLESS FOUNDRY & MACHINE CORP., 823 St. Paul Ave., Waukesha, Wis. ADV. PG. 255

TUBING, Welded, Stainless Steel

All-Stainless, Inc., 40 Rugg Rd., Allston 34, Mass.
Artison Metal Products Co., Inc., 63 Pont St., Waltham 53, Mass.
Babcock & Wilcox Co., Tubular Products Div., Beaver Falls, Pa.
Bishop & Co., J., Platinum Works, Malvern, Pa.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Carpenter Steel Co., Alloy Tube Div., Union, N. J.
Chase Brass & Copper Co., Inc., 236 Grand St., Waterbury 20, Conn.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Crucible Steel Co. of America, Dept. N. B. G., Box 2518, Pittsburgh 30, Pa.
ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave., Portland 10, Ore. ADV. PG. 175
Flexonics Corp., 1315 S. Third Ave., Maywood, Ill.
Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio.
Smith Tube Corp., Ridgewood, N. J.
Streed Products Corp., P. O. Box 447, Gasden, Ala.
SUPERIOR TUBE CO., Box 191, Norristown, Pa. ADV. PG. 71
Swepco Tube Corp., 1 Clifton Blvd., Clifton, N. J.
Taylor Forge & Pipe Works, Inc., 4735 W. 14th St., Chicago 50, Ill.
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England ADV. PG. 66
TUBE METHODS, INC., Bridgeport, Pa. ADV. PG. 168
Tube Reducing Corp., 520 Main Ave., Wallington, N. J.
Wall Tube & Metal Products Co., P. O. Box 330, Newport, Tenn.
Wallingford Steel Co., 80 Valley St., Wallingford, Conn.
Willamette Iron & Steel Co., 2800 N.W. Front Ave., Portland 10, Ore.

TUBING—Zirconium

America Silver Co., 36—07 Prince St., Flushing 54, N. Y.
Babcock & Wilcox Co., Tubular Products Div., Beaver Falls, Pa.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
CARBORUNDUM METALS CO., DIV OF THE CARBORUNDUM CO., P. O. Box 32, Akron, N. Y. ADV. PG. 54, 55
Carpenter Steel Co., Alloy Tube Div., Union, N. J.
Crucible Steel Co. of America, Dept. N. B. G., Box 2518, Pittsburgh 30, Pa.
HARVEY ALUMINUM, 19200 S. Western Ave., Torrance, Calif. ADV. PG. 59
Heraeus GmbH, W. C. 12—14 Heraeusstr., Hanau, Germany
MALLORY-SHARON METALS CORP., Niles, Ohio ADV. PG. 5
National Lead Co., 111 Broadway, New York 6, N. Y.
Nuclear Metals, Inc., Concord, Mass.
Oregon Metallurgical Corp., P. O. Box 484, Albany, Ore.
SUPERIOR TUBE CO., Box 191, Norristown, Pa. ADV. PG. 71
Tube Reducing Corp., 520 Main Ave., Wallington, N. J.
Wah Chang Corp., 233 Broadway, New York 7, N. Y.
Wolverine Tube Div. of Calumet & Hecla, Inc., 17200 Southfield Rd., Allen Park, Mich.

TURBINES—Gas

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
American Turbine Corp., 52 William St. New York 5, N. Y.
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Clark Bros. Co., Div. of Dresser Operations, Inc., Lincoln Ave. at Fifth St., Olean, N. Y.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5 N. Y. ADV. PG. 37—39
Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 1, Wis.
SOLAR AIRCRAFT CO., 2200 Pacific Highway, San Diego 12, Calif. ADV. PG. 143
Sunstrand-Turbo Div. of Sunstrand Machine Tool, Pacoima, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio

TURBINES—Steam

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
ALLIS-CHALMERS MFG. CO., 935 S. 70th St. Milwaukee 1, Wis. ADV. PG. 84, 85
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Coppus Engineering Corp., 334 Park Ave., Worcester, Mass.
De Laval Steam Turbine Co., Trenton 2, N. J.
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37—39
General Electric Co. Ltd. of England, Magnet House Kingsway, London, W. C. 2
Worthington Corp., Harrison, N. J.

ULTRASONIC EQUIPMENT

Acoustica Associates, Inc., 26 Windsor Rd., Mineola, N. Y.
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Alcar Instruments, Inc., 17 Industrial Ave., Little Ferry, N. J.
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
Arenberg Ultrasonic Lab., Inc., 94 Green St., Jamaica Plain 30, Mass.
ATOMIC ACCESSORIES, INC., 244—04 Jamaica Ave., Bellerose 26, N. Y. ADV. PG. 247
Atomic Laboratories, Berkeley, Calif.
BENDIX AVIATION CORP., CINCINNATI DIV., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Bogue Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N. J.
Branson Instruments, Inc., 37 Brown House Rd., Stamford, Conn.
BRANSON ULTRASONIC CORP., 1 Brown House Rd., Stamford, Conn. ADV. PG. 217
Bruel & Kjaer, Naerum, Denmark
Buehler, Ltd., 2120 Greenwood St., Evanston, Ill.
Cossor Instruments, Ltd. Cossor House, Highbury Grove, London, N5, England
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
CURTISS-WRIGHT CORP., RESEARCH DIV., Quehanna, Pa. ADV. PG. 181
Dawe Instruments Ltd., 99—101 Uxbridge Rd., Ealing, London W. 5, England
Dice Co., J. W., Englewood 41, N. J.
Dyna-Empire, Inc., 1075 Stewart Ave., Garden City, N. Y.
Electronic Assistance Corp., 20 Bridge Ave., Red Bank, N. J.
Falk & Co., Ltd., M., Emefco House, Bell St., Reigate (Surrey), England
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Radiological Ltd., 15—18 Clipstone St., London, W. 1, England
General Ultrasonics Co. 67 Mulberry St., Hartford 3, Conn.
Genisco, Inc., 2233 Federal Ave., Los Angeles 64, Calif.
Gulton Industries, Durham Ave., Metuchen, N. J.
Harriss (Engineers), Granta Terrace, Stapleford, Cambridge, England
Hermes Sonic, Inc., 13—19 University Place, New York 3, N. Y.
INTERELECTRONICS CORP., 2432 Grand Concourse, New York 58, N. Y. ADV. PG. 227
Isotope Products Div., Canadian Curtiss-Wright Ltd., Davis Rd., Oakville, Ontario, Canada
Kin Tel, 5725 Kearny Villa Rd., San Diego 11, Calif.
McKenna Laboratories, 2503 Main St., Santa Monica, Calif.
MAGNAFLUX CORP., 7346 W. Lawrence Ave., Chicago 31, Ill. ADV. PG. 239
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Mullard Equipment Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
NARDA ULTRASONICS CORP., DEPT. NBG, 625 Main St., Westbury, N. Y. ADV. PG. 113
Oakite Products, Inc., 19 Rector St., New York 6, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
PIONEER-CENTRAL DIV., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
SHEFFIELD CORP., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2 Mich. ADV. PG. 144, 145
Sperry Products, Inc., Danbury, Conn.
Union Elect-Sonics Corp., 11 Penn St., Quincy 69, Mass.

URANIUM
See METALS, ALLOYS & COMPOUNDS

URINALYSIS
See SERVICES

VACUUM CLEANERS
Breuer Electric Mfg. Co., 5100 N. Ravenswood Ave., Chicago 40, Ill.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Hild Floor Machine Co., 1217 W. Washington Blvd., Chicago, Ill.
Lamson Corp., Syracuse 1, N. Y.
Martindale Electric Co., Box 617, Edgewater Branch, Cleveland 7, Ohio

VACUUM EQUIPMENT & ACCESSORIES
See also DETECTORS—Leak
FURNACES—Vacuum
VALVES—Vacuum

Adler's Metal Works, 1310 Germantown Ave., Philadelphia 22, Pa.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
Beach-Russ Co., 50 Church St., New York 7, N. Y.
Central Scientific Co., 1700 Irving Park Rd., Chicago 13, Ill.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex Los Angeles 54, Calif.
Cooper Co., D. C., 1467 S. Michigan Ave., Chicago, Ill.
Electronics Research Labs., 85 Surrey St., Brighton 35, Mass.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
Flexaust Co. 100 Park Ave., New York 17, N. Y.
GRAVER TANK & MFG. CO., INC., 4809 Tod Ave., East Chicago, Ind. ADV. PG. 195
Hallamore Electronics Co., 8352 Brookhurst, Anaheim, Calif.
Hastings-Raydist, Inc., Newcomb Ave., Hampton, Va.
Heraeus GmbH, W. C., 12—14 Heraeusstr., Hanau, Germany
High Vacuum Equipment Corp., 2 Churchill Rd., Hingham, Mass.
HOFMAN LABORATORIES, INC. Evans Terminal, Hillside, N. J. ADV. PG. 34
HOKE, INC., Cresskill, N. J. ADV. PG. 222
International Pump & Machine Works, 81 Dorsa Ave., Livingston, N. J.
Kinetics Corp., 2 Churchill Rd., Hingham, Mass.
Kinney Mfg. Div., The, New York Brake Co., 3529 Washington St., Boston 30, Mass.
Kontes Glass Co., Dept. P—159, Vineland, N. J.
L&B Welding Equipment, Inc. 2424 6th St., Berkeley, Calif.
LaPine & Co., Arthur S., 6001 S. Knox Ave., Chicago 29, Ill.
Litton Engineering Labs., P. O. Box 949, Grass Valley, Calif.
NRC EQUIPMENT CORP., A SUB. OF NATIONAL RESEARCH CORP., 88 Charlemont St., Newton Highlands 61, Mass. ADV. PG. 159
National Research Corp., 70 Memorial Drive, Cambridge 39, Mass.
Process & Instruments, 15 Stone Ave., Brooklyn 33, N. Y.
Research Vacuum Supply Co., 6712 N. Clark St. Chicago, Ill.
Resitron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
Scientific Engineering Laboratory, 1510 6th St., Berkeley 10, Calif.
STOKES CORP., F. J. 5500 Tabor Rd., Philadelphia 20, Pa. ADV. PG. 268
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Vacuum Equipment Div. of The New York Air Brake Co., 1325 Admiral Wilson Blvd., Camden 11, N. J.
Vacuum Industrial Applications, Ltd., Netherton Rd., Wishaw, Lanarkshire, Scotland
Vacuum Specialties Co., Inc., 34 Linden St., Somerville, Mass.
Vacuum Tube Products Co., Inc., 2020 Short St., Oceanside, Calif.
Veeco Vacuum Corp., 86 Denton Ave., New Hyde Park, N. Y.
Wallace & Tiernan, Inc., 25 Main St., Belleville 9, N. J.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868 Pittsburgh 30, Pa. ADV. PG. 7-10
WHEELER MFG. CO., C. H., 19th & Lehigh Sts., Philadelphia 32, Pa. ADV. PG. 244

VACUUM MELTED METALS
See METALS—Vacuum Melted

VACUUM PUMPS
See PUMPS—Vacuum

VALVE OPERATORS
AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Askania Regulator Co., 240 E. Ontario St., Chicago 11, Ill.
ASSOCIATED VALVE & ENGINEERING CO., 1150 W. Marquette Rd. Chicago 21, Ill. ADV. PG. 252
ATWOOD & MORRILL CO., Salem, Mass. ADV. PG. 204
AUTOMATIC SWITCH CO., 56-N Hanover Rd., Florham Park, N. J. AD. PG. 99
Automatic Timing & Controls, Inc., King of Prussia, Pa.
B-I-F Industries, Inc., 530-D Harris Ave., Providence 1, R. I.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill.
BENDIX AVIATION CORP. Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Black, Sivalls & Bryson Inc., 7500 E. 12th St., Kansas City 26, Mo.
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Carter Controls, Inc., 2800 Bernice Rd., Lansing, Mich.
Cash Co., A. W., P. O. Box 551, Decatur Ill.
Condenser Service & Engineering Co., Inc., 150 Observer Highway, Hoboken, N.
Conoflow Corp., 2100 Arch St., Philadelphia 3, Pa.
Controlex Corp. of America, P. O. Box 511, Westchester County Airport, White Plains, N. Y.
Cutler-Hammer, Inc., 412 N. 12th St., Milwaukee 1, Wis.
Dahl Co., Inc. G. W., Tupelo St., Bristol, R. I.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
Fisher Governor Co., Marshalltown, Iowa
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
GENERAL ELECTRIC CO., APPARATUS SALES DIV. 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Hammel-Dahl Co., Warwick Industrial Park, Providence 5, R. I.
Hanna Engineering Works, 1767 N. Elston Ave., Chicago 22, Ill.
LADISH CO., 5458 S. Packard Ave., Cudahy, Wis. ADV. PG. 46, 47
Manning, Maxwell & Moore, Inc. 250 E. Main St., Stratford, Conn.
Marine & Industrial Products Co., 1150 W. Marquette Blvd., Chicago 21, Ill.
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
Okadee Valve Co., 332 S. Michigan Ave. Chicago 4, Ill.
ROBERTSHAW-FULTON CONTROLS CO., FULTON SYLPHON DIV., P. O. Box 400, Knoxville 1, ADV. PG. 178
Sarco Co., Inc., 350 Fifth Ave., New York 1, N. Y.
Skinner Electric Valve Div., The Skinner Chuck Co., New Britain, Conn.
Smith Co., S. Morgan, York, Pa.
Stow Mfg. Co., 355 Shear St., Binghamton, N. Y.
Thompson Products Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
UNITED SHOE MACHINERY CORP. ATOMIC POWER DEPT., RESEARCH DIV., Balch St., Beverly, Mass. ADV. PG. 78, 79
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
Wagner Electric Co., 6400 Plymouth Ave., St. Louis 14, Mo.
Walworth Co., 50 Third Ave., New York 17, N. Y.
WESTINGHOUSE ELECTRIC CORP. P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10
WHEELER MFG. CO., C. H., 19th & Lehigh Sts., Philadelphia 32, Pa. ADV. PG. 244

VALVES—Ball
Anderson Valve Works, 9th & Adams Ave., Marion, Ind.
BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa.
Carpenter Mfg. Corp., 6723 Denison Ave., Cleveland 2, Ohio
Consolidated Electrodynamics Corp. Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
Controls Co. of America, 2450 N. 32nd St., Milwaukee 45, Wis.
ELECTRIC STEEL FOUNDRY CO., 2165 N W 25th Ave., Portland 10, Ore. ADV. PG. 175
Fairbanks Co., The, 393 Lafayette St., New York 3, N. Y.
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
General Nuclear Corp., 550 Fifth Ave., New York 26, N. Y.
Greer Hydraulics, Inc. International Airport, Jamaica 30, N. Y.
Industrial Plastic Fabricaters, Endicott St., Norwood, Mass.
Jamesbury Corp., 45 New St., Worcester 5, Mass.
Keckley Co., O. C., 3400 Cleveland St., Skokie, Ill.
LADISH CO., 5458 S. Packard Ave., Cudahy, Wis. ADV. PG. 46, 47
On Mark Couplings, 4440 York Blvd., Los Angeles 41, Calif.
Smith Co., S. Morgan York, Pa.
Sunstrand-Turbo Div. of Sunstrand Machine Tool, Pacoima, Calif.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Vickery Co., The, 610 Sixteenth St., Oakland 12, Calif.
Willamette Iron & Steel Co., 2800 N. W. Front Ave., Portland 10, Ore.
Worcester Valve Co., Inc., 16 Parker St., Worcester, Mass.

VALVES—Bellows Seal
Alloy Steel Products Co., 1329 W. Elizabeth Ave., Linden N. J.
Annin Co., The, Div. of The Annin Corp., 1040 S. Vail Ave., Montebello, Calif.
ASSOCIATED VALVE & ENGINEERING CO., 1150 W. Marquette Rd., Chicago 21, Ill. ADV. PG. 252
Atkomatic Valve Co., Inc., 545 Abbott St., Indianapolis, Ind.
Cambridge Corp., 2 Industrial Park, Lowell, Mass.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
CRANE CO., 836 S. Michigan Ave. Chicago 5, Ill. AD. PG. 13
Dahl Co., Inc., G. W., Tupelo St., Bristol, R. I.
Farris Engineering Co., 400 Commercial Ave., Palisades Park, N. J.
Grove Valve & Regulator Co., 6529 Hollis St., Oakland 8, Calif.
Hammel-Dahl Co., Warwick Industrial Park, Providence 5, R. I.
Hills McCanna Co., 4605 W. Touhy Ave., Chicago 46, Ill.
HOKE, INC. Cresskill, N. J. ADV. PG. 222
Kieley & Mueller Co., Inc., Genung St., Middletown, N. Y.
Kinney Mfg. Div., The New York Air Brake Co., 3529 Washington St., Boston 30, Mass.
Lunkenheimer Co., The, Beekman St. & Waverly Ave., Cincinnati 14, Ohio
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Powell Co., William, 2525 Spring Grove Ave., Cincinnati 22, Ohio
ROBERTSHAW-FULTON CONTROLS CO., FULTON SYLPHON DIV., P. O. Box 400, Knoxville 1, Tenn. ADV. PG. 178
Vacuum Equipment Div., of The New York Air Brake Co., 1325 Admiral Wilson Blvd., Camden 11, N. J.
Vacuum Industrial Applications, Ltd., Netherton Rd., Wishaw, Lanarkshire, Scotland
Veeco Vacuum Corp., 86 Denton Ave., New Hyde Park, N. Y.

VALVES—Butterfly
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85
Automatic Timing & Controls, Inc., King of Prussia, Pa.
B-I-F Industries, Inc., 530—D Harris Ave., Providence 1, R. I.
Conoflow Corp., 2100 Arch St., Philadelphia 3, Pa.
CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill. ADV. PG. 13
Eclipse Fuel Engineering Co., 1100 Buchanan, Rockford, Ill.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Fisher Governor Co., Marshalltown, Iowa
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
LADISH CO., 5458 S. Packard Ave., Cudahy, Wis. ADV. PG. 46, 47
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda Calif.
Powell Co., William, 2525 Spring Grove Ave., Cincinnati 22, Ohio
PRATT CO., HENRY, 2222 S. Halsted St., Chicago, Ill. ADV. PG. 110
Rockwell Co., R. S., 200 Eliot St., Fairfield, Conn.
Smith Co., S. Morgan, York, Pa.
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
Vacuum Industrial Applications Ltd., Netherton Rd., Wishaw, Lanarkshire, Scotland
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

VALVES—Gas-Loaded
Atlas Valve Co., 280 South St., Newark 5, N. J.
Foster Engineering Co., 835 Lehigh Ave., Union, N. J.
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
Sunstrand-Turbo Div. of Sunstrand Machine Tool, Pacoima, Calif.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio

VALVES—Gate

ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
All-Stainless, Inc., 40 Rugg Rd., Allston 34, Mass.
Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
Allmetal Screw Products Co., 821 Stewart Ave., Garden City, N. Y.
Alloy Steel Products Co., 1329 W. Elizabeth Ave., Linden, N. J.
ATWOOD & MORRILL CO., Salem, Mass. ADV. PG. 204
Blaw-Knox Co., 300 Sixth Ave., N.B., Pittsburgh 22, Pa.
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
Controls Co. of America, 2450 N. 32nd St., Milwaukee 45, Wis.
COOPER ALLOY CORP., Bloy St. & Ramsey Ave., Hillside 5, N. J. ADV. PG. 56
CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill. ADV. PG. 13
DeZurik Corp., Sartell, Minn.
Edward Valves, Inc., 1200 W. 145th St., East Chicago, Ind.
ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave., Portland 10, Ore. ADV. PG. 175
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
Fairbanks Co., The, 393 Lafayette St., New York 3, N. Y.
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
General Nuclear Corp., 550 Fifth Ave., New York 26, N. Y.
Greer Hydraulics, Inc., International Airport, Jamaica 30, N. Y.
Hamer Valves, Inc., 2919 Gardenia Ave., P. O. Box 1951, Long Beach 6, Calif.
Industrial Plastic Fabricators, Endicott St., Norwood, Mass.
Jordon Corp., Div. of OPW Corp., 6013 Wiehe Rd., Cincinnati 13, Ohio
LADISH CO., 5458 S. Packard Ave., Cudahy, Wis. ADV. PG. 46, 47
LYNDON AIRCRAFT 140 Clifford St., Newark, N. J. ADV. PG. 250
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Okadee Valve Co., 332 S. Michigan Ave., Chicago 4, Ill.
Powell Co., William, The, 2525 Spring Grove Ave., Cincinnati 22, Ohio
R-P & C Valve Div., American Chain & Cable Co., Inc., Reading, Pa.
STOKES CORP., F. J., 5500 Tabor Rd. Philadelphia 20, Pa. ADV. PG. 268
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Trane Co., The, LaCrosse, Wis.
Valcor Engineering Corp., 333 Carnegie Ave., Kenilworth, N. J.
Vanton Pump & Equipment Corp., 201 Sweetland Ave., Hillside, N. J.
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
Vogt Machine Co., Henry, 1000 W. Ormsby St., Louisville, Ky.
Walworth Co., 750 Third Ave., New York 17, N. Y.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10
Willamette Iron & Steel Co., 2800 N. W. Front Ave., Portland 10 Ore.
Worcester Valve Co., Inc., 16 Parker St., Worcester, Mass.

VALVES—Globe

Airmatic Valve, Inc., 7313 Associate Ave., Cleveland 9, Ohio
Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
Allmetal Screw Products Co., 821 Stewart Ave., Garden City, N. Y.
Alloy Steel Products Co., 1329 W. Elizabeth Ave., Linden, N. J.
All-Stainless Inc., 40 Rugg Rd., Allston 34, Mass.
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
Anderson Valve Works, 9th & Adams Ave., Marion, Ind.
ASSOCIATED VALVE & ENGINEERING CO., 1150 W. Marquette Rd., Chicago 21, Ill. ADV. PG. 252
ATWOOD & MORRILL CO., Salem, Mass. AD. PG. 204
Autoclave Eng. Sales Corp., 2930 W. 22nd St., Erie, Pa.
AUTOMATIC SWITCH CO., 56—N Hanover Rd., Florham Park, N. J. ADV. PG. 99
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill.
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa.
Conoflow Corp., 2100 Arch St., Philadelphia 3, Pa.
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
Controls Co. of America, 2450 N. 32nd St., Milwaukee 45, Wis.
COOPER ALLOY CORP., Bloy St. & Ramsey Ave., Hillside 5, N. J. ADV. PG. 56
CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill. ADV. PG. 13
Dahl Co., Inc., G. W., Tupelo St., Bristol, R. I.
Edward Valves, Inc., 1200 W. 145th St., East Chicago, Ind.
ELECTRIC STEEL FOUNDRY CO., 2165 NW 25th Ave., Portland 10, Ore. ADV. PG. 175
Fairbanks Co., The, 393 Lafayette St., New York 3, N. Y.
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
General Nuclear Corp., 550 Fifth Ave., New York 26, N. Y.
Greer Hydraulics, Inc., International Airport, Jamica 30, N. Y.
Grinnell Co., 260 W. Exchange St., Providence 1, R. I.
Hammel-Dahl Co., Warwick Industrial Park, Providence 5, R. I.
HOKE, INC., Cresskill, N. J. ADV. PG. 222
Industrial Plastic Fabricators, Endicott St., Norwood, Mass.
Jerguson Gage & Valve Co., Adams St., Burlington Mass.
Jordon Corp., Div. of OPW Corp., 6013 Wiehe Rd., Cincinnati 13, Ohio
Kieley & Mueller Co., Inc., 64 Genung St., Middletown, N. Y.
LADISH CO. 5458 S. Packard Ave., Cudahy, Wis. ADV. PG. 46, 47
Luzerne Rubber Co., Muirhead Ave., Trenton, N. J.
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
Powell Co., William, The, 2525 Spring Grove, Ave., Cincinnati 22, Ohio
R-P & C Valve Div., American Chain & Cable Co., Inc., Reading, Pa.
Robbins Aviation, Inc., 2350 E. 38th St., Los Angeles 58, Calif.
ROBERTSHAW-FULTON CONTROLS CO., FULTON SYLPHON DIV., P. O. Box 400, Knoxville 1, Tenn. ADV. PG. 178
Schutte & Koerting Co., Cornwell Heights, Bucks County, Pa.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Trane Co., The, LaCrosse, Wis.
Vanton Pump & Equipment Corp., 201 Sweetland Ave., Hillside, N. J.
Vogt Machine Co., Henry, 1000 W. Ormsby St., Louisville Ky.
Walworth Co., 750 Third Ave., New York 17, N. Y.
Worcester Valve Co., Inc., 16 Parker St., Worcester, Mass.
Yarnall-Waring Co., Chestnut Hill, Philadelphia 18, Pa.

VALVES—Lift

Alloy Steel Products Co., 1329 W. Elizabeth Ave., Linden, N. J.
ATWOOD & MORRILL CO., Salem, Mass. ADV. PG. 204
AUTOMATIC SWITCH CO., 56—N Hanover Rd., Florham Park, N. J. ADV. PG. 99
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa.
CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill. ADV. PG. 13
Edward Valves, Inc., 1200 W. 145th St., East Chicago, Ind.
Fairbanks Co., The, 393 Lafayette St., New York 3, N. Y.
Hamer Valves, Inc., 2919 Gardenia Ave., P. O. Box 1951, Long Beach 6, Calif.
LADISH CO., 5458 S. Packard Ave. Cudahy, Wis. ADV. PG. 46, 47
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Powell Co., William, The, 2525 Spring Grove Ave., Cincinnati 22, Ohio
Walworth Co., 750 Third Ave., New York 17, N. Y.
Willamette Iron & Steel Co., 2800 N. W. Front Ave., Portland 10, Ore.

VALVES—Packless

See VALVES—Bellows Seal.

VALVES—Piston

Airmatic Valve, Inc., 7313 Associate Ave., Cleveland 9, Ohio
Anderson Valve Works, 9th & Adams Ave., Marion, Ind.
ASSOCIATED VALVE & ENGINEERING CO., 1150 W. Marquette Rd., Chicago 21, Ill. ADV. PG. 252
Atlas Valve Co., 280 South St., Newark 5, N. J.
ATWOOD & MORRILL CO., Salem, Mass. ADV. PG. 204
AUTOMATIC SWITCH CO., 56—N Hanover Rd., Florham Park, N. J. ADV. PG. 99
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa.
Carpenter Mfg. Corp., 6723 Denison Ave., Cleveland 2, Ohio
Carter Controls, Inc., 2800 Bernice Rd., Lansing, Mich.
Cash Co., A. W., P. O. Box 551, Decatur, Ill.
Conoflow Corp., 2100 Arch St., Philadelphia 3, Pa.
Controls Co. of America, 2450 N. 32nd St., Milwaukee 45, Wis.
Coppus Engineering Corp., 334 Park Ave., Worcester, Mass.
CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill. ADV. PG. 13
Denison Engineering Div., American Brake Shoe Co., 1160 Dublin Rd., Columbus 19, Ohio
Edward Valves, Inc., 1200 W. 145th St., East Chicago, Ind.
Elliott Brothers (London) Ltd., Lewisham Century Works, London S. E. 13, England
HOKE, INC., Cresskill, N. J. ADV. PG. 222
Kieley & Mueller Co., Inc. 64 Genung St., Middletown, N. Y.
LADISH CO., 5458 S. Packard Ave., Cudahy, Wis. ADV. PG. 46, 47
LYNDON AIRCRAFT, 140 Clifford St., Newark, N. J. ADV. PG. 250
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Moran Flexible Joint Co., Louisville, Ky.
Oilgear Co., The, 16th St. & Pierce, Milwaukee 1, Wis.
Telecomputing Corp., 915 N. Citrus Ave. Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
Walworth Co., 750 Third Ave., New York 17, N. Y.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

VALVES—Plugcock

All-Stainless, Inc., 40 Rugg Rd., Allston 34, Mass.
ATWOOD & MORRILL CO., Salem, Mass. ADV. PG. 204
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa.
COOPER ALLOY CORP., Bloy St. & Ramsey Ave., Hillside 5 N. J. ADV. PG. 56
DeZurik Corp., Sartell, Minn.
Duriron Co., Inc., 450 N. Findlay St., Dayton 4, Ohio
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
Hamer Valves, Inc., 2919 Gardenia Ave., P. O. Box 1951, Long Beach 6, Calif.
Imperial Brass Mfg. Co., 6300 W. Harrison St., Chicago 7, Ill.
James, Pond & Clark, Inc., 2181 E. Foothill Blvd., Pasadena, Calif.
Kontes Glass Co., Dept. P—159, Vineland, N. J.
LADISH CO., 5458 S. Packard Ave., Cudahy, Wis. ADV. PG. 46, 47
Luzerne Rubber Co., Muirhead Ave., Trenton, N. J.
Powell Co., William, The, 2525 Spring Grove Ave., Cincinnati 22, Ohio
R-P & C Valve Div., American Chain & Cable Co., Inc., Reading, Pa.
Schutte & Koerting Co., Cornwell Heights, Bucks County, Pa.
Smith Co., S. Morgan, York, Pa.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
T. I. NUCLEAR ENGINEERING LTD., The Adelphi, London, W. C. 2, England ADV. PG. 66
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Tube Turns Plastics, Inc., An Affiliate of Chemetron Corp., 2929 Magazine St., Louisville 11, Ky.
Vanton Pump & Equipment Corp., 201 Sweetland Ave., Hillside, N. J.
Walworth Co., 750 Third Ave., New York 17, N. Y.
Willamette Iron & Steel Co., 2800 N. W. Front Ave., Portland 10, Ore.

VALVES—Poppet

Airmatic Valve, Inc., 7313 Associate Ave., Cleveland 9, Ohio
Atlas Valve Co., 280 South St., Newark 5, N. J.
ATWOOD & MORRILL CO., Salem, Mass. ADV. PG. 204
AUTOMATIC SWITCH CO., 56—N Hanover Rd., Florham Park, N. J. ADV. PG. 99
Automatic Timing & Controls, Inc., King of Prussia, Pa.
BENDIX AVIATION CORP., BENDIX-PACIFIC DIV., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa.
Controls Co. of America, 2450 N. 32nd St., Milwaukee 45, Wis.
James, Pond & Clark, Inc., 2181 E. Foothill Blvd., Pasadena, Calif.
LYNDON AIRCRAFT, 140 Clifford St., Newark, N. J. ADV. PG. 250
Marine & Industrial Products Co., 1150 W. Marquette Blvd., Chicago 21, Ill.
On Mark Couplings, 4440 York Blvd., Los Angeles 41, Calif.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
United Aircraft Products, Inc., 116 Bolander St., Dayton, Ohio
Vacuum Equipment Div. of The New York Air Brake Co., 1325 Admiral Wilson Blvd., Camden 11, N. J.
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.

VALVES—Solenoid

Airmatic Valve, Inc., 7313 Associate Ave., Cleveland 9, Ohio
Alco Valve Co., 865 Kingsland Ave., St. Louis 5, Mo.

Allied Control Co., Inc., 2 East End Ave., New York 21, N. Y.
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
Anderson Valve Works, 9th & Adams Ave., Marion, Ind.
Atkomatic Valve Co., Inc., 545 W. Abbott St., Indianapolis, Ind.
AUTOMATIC SWITCH CO., 56—N Hanover Rd., Florham Park, N. J. ADV. PG. 99
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill.
BENDIX AVIATION CORP., BENDIX-PACIFIC DIV., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
Caltron Products Co., 3518 W. Pico Blvd., Los Angeles 19, Calif.
Carter Controls, Inc., 2800 Bernice Rd., Lansing, Mich.
Clark Controller Co., 1146 E. 152nd St., Cleveland 10, Ohio
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
Controls Co. of America, 2450 N. 32nd St., Milwaukee 45, Wis.
Denison Engineering Div., American Brake Shoe Co., 1160 Dublin Rd., Columbus 19, Ohio
Eclipse Fuel Engineering Co., 1100 Buchanan, Rockford, Ill.
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
General Nuclear Corp., 550 Fifth Ave., New York 26, N. Y.
Guardian Electric Co., 1625 W. Walnut St., Chicago 12, Ill.
Hanna Engineering Works, 1767 N. Elston Ave., Chicago 22, Ill.
Hays Mfg. Co., 814 W. 12th St., Erie, Pa.
HOKE, INC., Cresskill, N. J. ADV. PG. 222
Jackes-Evans Mfg. Co., 4427 Geraldine, St. Louis 15, Mo.
Johnson Corp., 809 Wood St., Three Rivers, Mich.
Kahlenberg Bros. Co., 12th & Monroe Sts., Two Rivers, Wis.
Keckley Co., O. C., 3400 Cleveland St., Skokie, Ill.
Koontz-Wagner Electric Co., N. Michigan & Merion, South Bend, Ind.
Laurence Co., Inc., R. G., 134 Summit St., Tenafly, N. J.
Leslie Co., 299 Grant Ave., Lyndhurst, N. J.
LYNDON AIRCRAFT, 140 Clifford St., Newark, N. J. ADV. PG. 250
Mercoid Corp., 4201 Belmont Ave., Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., 2735 Fourth Ave., S., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Oilgear Co., The, 16th St. & Pierce, Milwaukee 1, Wis.
ROBERTSHAW-FULTON CONTROLS CO., FULTON SYLPHON DIV., P. O. Box 400, Knoxville 1, Tenn. ADV. PG. 178
Ruggles-Klingemann Mfg. Co., Salem, Mass.
Sarco Co., Inc., 350 Fifth Ave., New York 1, N. Y.
Skinner Electric Valve Div., The Skinner Chuck Co., New Britain, Conn.
Squires Co., C. E., 18805 Syracuse Ave., Cleveland 10, Ohio
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
Valcor Engineering Corp., 333 Carnegie Ave., Kenilworth, N. J.
Vickers Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

VALVES—Spring-Loaded

Airmatic Valve, Inc. 7313 Associate Ave., Cleveland 9, Ohio
All-Stainless, Inc., 40 Rugg Rd., Allston 34, Mass
Alloy Steel Products Co., 1329 W. Elizabeth Ave., Linden, N. J.
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
Anderson Valve Works, 9th & Adams Ave., Marion, Ind.
ASSOCIATED VALVE & ENGINEERING CO., 1501 W. Marquette Rd., Chicago 21, Ill. ADV. PG. 252
Atlas Valve Co., 280 South St., Newark 5, N. J.
ATWOOD & MORRILL CO., Salem, Mass. ADV. PG. 204
AUTOMATIC SWITCH CO., 56—N Hanover Rd., Florham Park, N. J. ADV. PG. 99
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa.
Cash Co., A. W., P. O. Box 551, Decatur, Il.
Clark Mfg. Co., 1830 E. 38th St., Cleveland 14, Ohio
Controls Co. of America, 2450 N. 32nd St., Milwaukee 45, Wis.
COOPER ALLOY CORP., Bloy St. & Ramsay Ave., Hillside 5, N. J. ADV. PG. 56
Crosby Valve & Gage Co., 43 Kendrick St., Wrentham, Mass.
Dahl Co., Inc., G. W., Tupelo St., Bristol, R. I
Edward Valves Inc., 1200 W. 145th St., East Chicago, Ind.
Fairbanks Co., The, 393 Lafayette St., New York 3, N. Y.
Farris Engineering Co., 400 Commercial Ave., Palisades Park, N. J.
Foster Engineering Co., 835 Lehigh Ave., Union, N. J.
FOXBORO CO., 38 Neponset Ave., Foxboro, Mass. ADV. PG. 94, 95
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
General Nuclear Corp., 550 Fifth Ave., New York 26, N. Y.
Grinnell Co., 260 W. Exchange St., Providence 1, R. I.
Hammel-Dahl Co., Warwick Industrial Park, Providence 5, R. I.
James, Pond & Clark, Inc., 2181 E. Foothill Blvd., Pasadena, Calif.
Jordon Corp., Div. of OPW Corp., 6013 Wiehe Rd., Cincinnati 13, Ohio
Kieley & Mueller Co., Inc., 64 Genung St., Middletown, N. Y.
Kontes Glass Co., Dept. P—159, Vineland, N. J.
Kunkle Valve Co., 119 S. Clinton St., Fort Wayne, Ind.
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Marine & Industrial Products Co., 1150 W. Marquette Blvd., Chicago 21, Ill.
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Oilgear Co., The, 6th St. & Pierce, Milwaukee 1, Wis.
Okadee Valve Co., 332 S. Michigan Ave., Chicago 4, Ill.
On Mark Couplings, 4440 York Blvd., Los Angeles 41, Calif.
Schutte & Koerting Co., Cornwell Heights, Bucks County, Pa.
Squires Co., C. E., 18805 Syracuse Ave., Cleveland 10, Ohio
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.

VALVES—Swing

All-Stainless, Inc., 40 Rugg Rd., Allston 34, Mass.
Alloy Steel Products Co., 1329 W. Elizabeth Ave., Linden, N. J.
Anderson Valve Works, 9th & Adams Ave., Marion, Ind.
ATWOOD & MORRILL CO., Salem, Mass. ADV. PG. 204
Coppus Engineering Corp., 334 Park Ave., Worcester, Mass.
CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill. ADV. PG. 13
Edward Valves, Inc., 1200 W. 145th St., East Chicago, Ind.
ELECTRIC STEEL FOUNDRY CO., 2165 N W 25th Ave., Portland 10, Ore. ADV. PG. 175
Elliott Brothers (London) Ltd., Lewisham, Century Works, London, S. E. 13, England
Fairbanks Co., The, 393 Lafayette St., New York 3, N. Y.
Foster Engineering Co., 835 Lehigh Ave., Union, N. J.
Hammel-Dahl Co., Warwick Industrial Park, Providence 5, R. I.
Jordon Corp., Div. of OPW Corp., 6013 Wiehe Rd., Cincinnati 13, Ohio
LADISH CO., 5458 S. Packard Ave., Cudahy, Wis. ADV. PG. 46, 47
Norwalk Valve Co., 33 Railroad Ave., South Norwalk, Conn.
Okadee Valve Co., 332 S. Michigan Ave., Chicago 4, Ill.
Powell Co., William, The, 2525 Spring Grove Ave., Cincinnati 22, Ohio
R-P & C Valve Div., American Chain & Cable Co., Inc., Reading, Pa.
Rockwell Co., W. S., 200 Eliot St., Fairfield, Conn.
Schutte & Koerting Co., Cornwell Heights, Bucks County, Pa.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Thompson Products Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Walworth Co., 750 Third Ave., New York 17, N. Y.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

VALVES—Vacuum

Airmatic Valve, Inc., 7313 Associate Ave., Cleveland 9, Ohio
All-Stainless, Inc., 40 Rugg Rd., Allston 34, Mass.
ASSOCIATED VALVE & ENGINEERING CO., 1150 W. Marquette Rd., Chicago 21, Ill. ADV. PG. 252
Atlas Valve Co., 280 South St., Newark 5, N. J.
AUTOMATIC SWITCH CO., 56—N Hanover Rd., Florham Park, N. J. ADV. PG. 99
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa.
Carpenter Mfg. Corp., 6723 Denison Ave., Cleveland 2, Ohio
Cash Co., A. W., P. O. Box 551, Decatur, Ill.
Conoflow Corp., 2100 Arch St., Philadelphia 3, Pa.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
COOPER ALLOY CORP., Bloy St. & Ramsey Ave., Hillside 5, N. J. ADV. PG. 56
Dahl Co., Inc., G. W., Tupelo St., Bristol, R. I.
E. M. I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
General Radiological Ltd., 15-18 Clipstone St., London, W. 1, England
Grinnell Co., 260 W. Exchange St., Providence 1, R. I.
Hammel-Dahl Co., Warwick Industrial Park, Providence 5, R. I.
Heraeus GmbH, W. C., 12-14 Heraeusstr., Hanau, Germany
High Vacuum Equipment Corp., 2 Churchill Rd., Hingham, Mass.
HOKE, INC., Cresskill, N. J. ADV. PG. 222
Imperial Brass Mfg. Co., 6300 W. Harrison St., Chicago 7, Ill.
International Pump & Machine Works, 81 Dorsa Ave., Livingston, N. J.
Jamesbury Corp., 45 New St., Worcester 5, Mass.
Jerguson Gage & Valve Co., Adams St., Burlington, Mass.
Kinetics Corp., 2 Churchill Rd., Hingham, Mass.
Kinney Mfg. Div., The New York Air Brake Co., 3529 Washington St., Boston 30, Mass.
Kontes Glass Co., Dept. P—159, Vineland, N. J.
NRC EQUIPMENT CORP., A SUB. OF NATIONAL RESEARCH CORP., 88 Charlemont St., Newton Highlands 61, Mass. ADV. PG. 159
National Research Corp., 70 Memorial Drive, Cambridge 39, Mass.
Norwalk Valve Co., 33 Railroad Ave., South Norwalk, Conn.
NUCLEAR MATERIALS & EQUIPMENT CORP., 680 Warren Ave., Apollo, Pa. ADV. PG. 163
NUCLIDE ANALYSIS ASSOCIATES, P. O. Box 752, State College, Pa. ADV. PG. 257
Powell Co., William, The, 2525 Spring Grove Ave., Cincinnati 22, Ohio
Research Vacuum Supply Co., 6712 N. Clark St., Chicago, Ill.
Resitron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
Robbins Aviation, Inc., 2350 E. 38th St., Los Angeles 58, Calif.
ROBERTSHAW-FULTON CONTROLS CO., FULTON SYLPHON DIV., P. O. Box 400, Knoxville 1, Tenn. ADV. PG. 178
Simplex Valve & Meter Co., 7 E. Orange St., Lancaster, Pa.
Skinner Electric Valve Div., The Skinner Chuck Co., New Britain, Conn.
Squires Co., C. E., 18805 Syracuse Ave., Cleveland 10, Ohio
STOKES CORP., F. J., 5500 Tabor Rd., Philadelphia 20, Pa. ADV. PG. 268
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
Vacuum Equipment Div. of The New York Air Brake Co., 1325 Admiral Wilson Blvd., Camden 11, N. J.
Vacuum Industrial Applications, Ltd., Netherton Rd., Wishaw, Lanarkshire, Scotland
Vacuum Specialties Co., Inc., 34 Linden St., Somerville, Mass.
Vanton Pump & Equipment Corp., 201 Sweetland Ave., Hillside, N. J.
Veeco Vacuum Corp., 86 Denton Ave., New Hyde Park, N. Y.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10

VENTILATION EQUIPMENT

See also FANS and AIR CONDITIONING UNITS

Accurate Sheet Metal & Mfg. Works, 2336-44 Milwaukee Ave., Chicago 47, Ill.
Air Controls, Inc., 2312 Superior Ave., Cleveland 14, Ohio
Alliance Mfg. Co., Lake Park Blvd., Alliance, Ohio
American Agile Corp., P. O. Box 168, Bedford, Ohio
American Air Filter Co., 215 Central Ave., Louisville 8, Ky.
Andel & Co., Inc., 5218 N. Kedzie Ave., Chicago 25, Ill.
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Clark Mfg. Co., 1830 E. 38th St., Cleveland 14, Ohio
Coppus Engineering Corp., 334 Park Ave., Worcester, Mass.
Dayton Electric Mfg. Co., 126 S. Oakley Blvd., Chicago 12, Ill.
Elliott Brothers (London) Ltd., Lewisham Century Works, London, S. E. 13, England
Flexaust Co., 100 Park Ave., New York 17, N. Y.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Hirschman-Pohle Co., Inc., 115 Lent Ave., LeRoy, N. Y.
Ilg Electric Ventilating Co., 2850 N. Pulaski Rd., Chicago 41, Ill.
Industrial Plastic Fabricators, Endicott St., Norwood, Mass.
Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.
Murphy & Miller Inc., 624 W. Taylor St., Chicago 7, Ill.

Swartwout Co., 18511 Euclid Ave., Cleveland 12, Ohio
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.

VESSELS—Pressure, Reactor

ACF INDUSTRIES, INC., NUCLEAR PRODUCTS-ERCO DIV., 508 Kennedy St., N. W., Washington 11, D. C. ADV. PG. 43
ALCO PRODUCTS, INC., Schenectady 5, N. Y. ADV. PG. 179
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
Artisan Metal Products Co., Inc., 63 Pond St., Waltham 53, Mass.
Avondale Marine Ways, Inc., P. O. Box 1030, New Orleans, La.
BABCOCK & WILCOX CO., THE, 161 E. 42nd St., New York 17, N. Y. ADV. PG. 3, 96
Babcock & Wilcox Ltd., Babcock House, 209 Eustron Rd., London N. W. 1, England
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa.
BLICKMAN, INC., S., 7900 Gregory Ave., Weehawken, N. J. ADV. PG. 190
Chicago Steel Tank Co., 6400 W. 66th St., Chicago, Ill.
Condenser Service & Engineering Co., Inc., 150 Observer Highway, Hoboken, N. J.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Cook Electric Co. 2700 Southport Ave., Chicago 14, Ill.
Doyle & Roth Mfg. Co., Inc., 136—50 24th St., Brooklyn 32, N. Y.
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Heraeus GmbH, W. C., 12-14 Heraeusstr., Hanau, Germany
Industrial Engineering Corp., 525 E. Woodbine, Louisville, Ky.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
KELLEY & CO., O. G., 98 Taylor St., Dorchester, Mass. ADV. PG. 64, 65
Menasco Mfg. Co., 805 S. San Fernando Blvd., Burbank, Calif.
New York Shipbuilding Corp., Camden, N. J.
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
Pittsburgh-Des Moines Steel Co., Pittsburgh 25, Pa.
Pittsburgh Piping & Equipment Co., 138 49th St., Pittsburgh, Pa.
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J.
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Smith Co., S. Morgan, York, Pa.
Smith Corp., A. O., 3533 N. 27th St., Milwaukee 1, Wis.
SOLAR AIRCRAFT CO., 2200 Pacific Highway, San Diego 12, Calif. ADV. PG. 143
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
Steel & Alloy Tank Co., 1 Bessemer St., Newark 5, N. J.
Struthers-Wells Corp., Warren, Pa.
Sun Shipbuilding & Dry Dock Co., Chester, Pa.
Teleweld Inc., 11535 Franklin St., Franklin Park, Ill.
Vogt Machine Co., Henry, 1000 W. Ormsby St., Louisville, Ky.
Willamette Iron & Steel Co., 2800 N. W. Front Ave., Portland 10, Ore.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

VOLTMETERS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main Germany
ASSEMBLY PRODUCTS, INC., Chesterland 6, Ohio ADV. PG. 230
Baldwin Instrument Co., Ltd., Brooklands, Works, Dartford, Kent, England
Boonton Radio Corp., Boonton, N. J.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Cubic Corp., 5575 Kearny Villa Rd., San Diego 11, Calif.
CURTISS-WRIGHT CORP., ELECTRONICS DIV., 631 Central Ave., Carlstadt, N. J. ADV. PG. 220
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
ELDMAG SPRL, Avenue Wellington 2, Brussels, Belgium ADV. PG. 241
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
Fielden Electronics, Ltd., Paston Rd., Whytenshawe, Manchester, England
GENERAL ELECTRIC CO., APPARATUS SALES DIV., 1 River Rd., Schenectady 5, N. Y. ADV. PG. 37-39
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
Greibach Instruments Corp., 315 North Ave., New Rochelle, N. Y.
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
Heath Co., Benton Harbor, Mich.
Hellpot Div. of Beckman Instruments, Fullerton, Calif.
Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland 8, Ohio
Industrial Devices, Inc., 982 River Rd., Edgewater, N. J.
Industrial Test Equipment Co., 55 E. 11th St., New York 3, N. Y.
International Instruments, Inc., P. O. Box 2954, New Haven 15, Conn.
Jennings Radio Mfg. Corp., 970 McLaughlin Ave., P. O. Box 1278, San Jose 12, Calif.
Leland Instruments, Ltd., 22-23 Millbank, Westminster, London, S. W. 1, England
Marion Electrical Instrument Co., Grenier Field, Manchester, N. H.
Martindale Electric Co., Box 617, Edgewater Branch, Cleveland 7, Ohio
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Meters, Inc., 5353 N. Keystone Ave., Indianapolis 20, Ind.
NEW ENGLAND SCIENTIFIC INSTRUMENTS CO., 238 Main St., Cambridge 42, Mass. ADV. PG. 198, 199
Pace Electrical Instruments Co., Inc., 70—31 84th St., Glendale 27, N. Y.
Phaostron Instrument & Electronic Co., 151 Pasadena Ave., South Pasadena, Calif.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland ADV. PG. 86
PHYSICS RESEARCH LABORATORIES, P. O. Box 555, Hempstead, N. Y. ADV. PG. 166
Precision Apparatus Co., Inc., 70—31 84th St., Glendale 27, N. Y.
Q. V. S., Inc., 20 N. 15th St., East Orange, N. J.
Radio Corporation of America, Industrial Electronic Products Div., Camden 2, N. J.
RAWSON ELECTRICAL INSTRUMENT CO., 114 Potter St., Cambridge 42, Mass. ADV. PG. 247
Servo-Tek Products Co., 1086 Goffe Rd., Hawthorne, N. J.
Shurite Meters, 35 Hamilton St., New Haven 8, Conn.
Simpson Electric Co., Div. of American Gage & Machine Co., 5208 W. Kinzie St., Chicago 44, Ill.
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
Sterling Mfg. Co., 7201 Wentworth Ave., Cleveland 2, Ohio
Triplett Electrical Instrument Co., 286 Harmon Rd., Bluffton, Ohio
Waters Manufacturing, Inc., Boston Post Rd., Wayland, Mass.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.
Winslow Co., Inc., 705 Lehigh Ave., P. O. Box 394, Union, N. J.

VOLTMETERS—Electronic

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Airmec Ltd., High Wycombe, Buckinghamshire, England
Allied Radio Corp., 100 N. Western Ave., Chicago 80, Ill.
ANTON ELECTRONIC LABS., INC., 1226-38 Flushing Ave., Brooklyn 37, N. Y. ADV. PG. 106
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
Barnes Development Co., 213 W. Baltimore Pike, Lansdowne, Pa.
Bruel & Kjaer, Naerum, Denmark
Burndept Ltd., West St., Erith, Kent, U. K.
CONSOLIDATED ELECTRODYNAMICS CORP., 300 N. Sierra Madre Villa, Pasadena, Calif. ADV. PG. 57
Cossor Instruments, Ltd., Cossor House, Highbury Grove, London, N5, England
Daven Co., The, Route 10, Livingston, N. J.
Dawe Instruments Ltd., 99-101 Uxbridge Rd., Ealing, London W.5, England
Dumont Labs., Inc., Allen B., 760 Bloomfield Ave., Clifton, N. J.
Electronic Associates, Inc., Long Branch, N. J.
E.M.I. ELECTRONICS LTD., Hayes, Middlesex, England ADV. PG. 236
Electronic Assistance Corp., 20 Bridge Ave., Red Bank, N. J.
Ericssons Telephones, Ltd., Instrument Div., High Church St., New Basford, Nottingham, England
Fielden Electronics, Ltd., Paston Rd., Whytenshawe, Manchester, England
Fluke Mfg. Co., Inc., John, 1111 W. Nickerson St., Seattle 99, Wash.
Franklin Electronics, Inc., E. Fourth St., Bridgeport, Pa.
Furzehill Laboratories Ltd., 57, Clarendon, Rd., Watford, Herts, England
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
Gulton Industries, Inc., Durham Ave., Metuchen, N. J.
GYRA ELECTRONICS CORP., 518 N. Spring St., La Grange Park, Ill. ADV. PG. 254
Hewlett-Packard Co., 275 Page Mill Rd., Palo Alto, Calif.
Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland 8, Ohio
Hycon Electronics, Inc., P. O. Bin D, Pasadena, Calif.
Industrial Test Equipment Co., 55 E. 11th St., New York 3, N. Y.
Jackson Electrical Instrument Co., 16 S. Patterson Blvd., Dayton 1, Ohio
Kay Electric Co., 14 Maple Ave., Pine Brook, N. J.
KEITHLEY INSTRUMENTS, INC., 12415 Euclid Ave., Cleveland 6, Ohio ADV. PG. 104
Kin Tel, 5725 Kearny Villa Rd., San Diego 1, Calif.
Leland Instruments, Ltd., 22-23 Millbank, Westminster, London, S. W. 1, England
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Measurements Corp., Boonton, N. J.
Metronix, Inc., Chesterland 6, Ohio
Mid-Century Instrumatic Corp., 611 Broadway, New York 12, N. Y.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Moseley Co., F. L., 409 N. Fair Oaks Ave., Pasadena, Calif.
Nash & Thompson Ltd., Oakcroft Rd., Chessington, Surrey, England
Neutronics Research Co., 165 Lake St., Waltham, Mass.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Precision Apparatus Co., Inc., 70—31 84th St., Glendale 27, N. Y.
Radio Corporation of America, Industrial Electronic Products Div., Camden 2, N. J.
RADIO CORPORATION OF AMERICA TUBE DIV., 415 S. Fifth St., Harrison, N. J. ADV. PG. 170
Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Simpson Electric Co., Div. of American Gage & Machine Co., 5208 W. Kinzie St., Chicago 44, Ill.
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
Telectro Industries Corp., 35—16 37th St., Long Island 1, N. Y.
Teletronics Laboratory, Inc., 94 Kinkel St., Westbury, N. Y.
Trio Laboratories, Inc., Plainview, N. Y.
Waveforms, Inc., 333 Sixth Ave., New York 14, N. Y.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.

WASTE-DISPOSAL EQUIPMENT

Adler Metal Works, 1310 Germantown Ave., Philadelphia 22, Pa.
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Atomic Energy Waste Disposal Service, 5410 Bond St., Oakland 1, Calif.
BLICKMAN, INC., S., 7900 Gregory Ave., Weehawken, N. J. ADV. PG. 190
Chem-Pure Service Co., 762 Industrial Rd., San Carlos, Calif.
Chicago Pump Co., 624 Diversey Parkway, Chicago 14, Ill.
Chicago Steel Tank Co., 6400 W. 66th St., Chicago, Ill.
Cuno Engineering Corp., 80 S. Vine St., Meriden, Conn.
Dorr-Oliver, Inc., Barry Place, Stamford, Conn.
Edlow Lead Co., 729 Bank St., Columbus 16, Ohio
Graver Water Conditioner Co., 216 W. 14th St., New York 11, N. Y.
GRISCOM-RUSSELL CO., SUB. OF GENERAL PRECISION EQUIPMENT CORP., Massillon, Ohio ADV. PG. 98
Illinois Water Treatment Co., 840 Cedar St., Rockford, Ill.
Infilco, Inc., P. O. Box 5033, Tucson, Ariz.
New Jersey Safety Equipment Co., Park Ave. at Garden State Pkwy., East Orange, N. J.
Niagara Filters Div. & Tolhurst Centrifugals Div., American Machine & Metals, Inc., East Moline, Ill.
Nuclear Engineering Ltd., Woolwich Rd., London S. E. 7, England
NUCLEONIC CORP. OF AMERICA, 196 Degraw St., Brooklyn 31, N. Y. ADV. PG. 247
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Permutit Co., 50 W. 44th St., New York 36, N. Y.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
PUROLATOR PRODUCTS, INC., 470 New Brunswick Ave., Rahway, N. J. ADV. PG. 32
RELIANCE, INC., 1212 Adams Ave., Philadelphia 24, Pa. ADV. PG. 92
Standard Railway Equipment Mfg. Co., 200 S. Michigan Ave., Chicago 4, Ill.
Witt Cornice Co., The, 4454 Steel Place, Cincinnati 9, Ohio
Worthington Corp., Harrison, N. J.

WATER CONDITIONERS

Adams Co., Inc., R. P., 473 E. Park Drive, Buffalo 17, N. Y.
ALLIS-CHALMERS MFG. CO., 935 S. 70th St., Milwaukee 1, Wis. ADV. PG. 84, 85

BARNSTEAD STILL & STERILIZER CO., 84 Lanesville Terrace, Boston 31, Mass. ADV. PG. 227
Chem-Pure Service Co., 762 Industrial Rd., San Carlos, Calif.
Chemical Process Co., Redwood City, Calif.
Crystal Research Labs., Inc., 29 Allyn St., Hartford 3, Conn.
Elgin Softener Corp., 179 S. Grove Ave., Elgin, Ill.
General Biochemicals, Inc., Laboratory Park, Chagrin Falls, Ohio
Graver Water Conditioner Co., 216 W. 14th St., New York 11, N. Y.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Illinois Water Treatment Co., 840 Cedar St., Rockford, Ill.
Infico, Inc., P. O. Box 5033, Tucson, Ariz.
Millipore Filter Corp., Bedford, Mass.
Monsanto Chemical Co., Plastics Div., 600 Monsanto Ave., Springfield 2, Mass.
National Aluminate Corp., 6216 W. 66th Place, Chicago 38, Ill.
Niagara Filters Div. & Telhurst Centrifugals Div., American Machine & Metals, Inc., East Moline, Ill.
Oakite Products, Inc., 19 Rector St., New York 6, N. Y.
Penfield Mfg. Co., Inc., 19 High School Ave., Meriden, Conn.
Permutit Co., 50 W. 44th St., New York 36, N. Y.
Philadelphia Quartz Co., 1146X Public Ledger Bldg., Philadelphia 6, Pa.
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
Scientific Equipment Co., Box 5686, Indianapolis 19, Ind.
Sparkler Mfg. Co., Mundelein, Ill.

WATER—Distilled

BARNSTEAD STILL & STERILIZER CO., 84 Lanesville Terrace, Boston 31, Mass. ADV. PG. 227
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.

WATER—Heavy

See also ISOTOPES—Stable

Abbott Laboratories, Oak Ridge, Tenn.
American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
Bio-Rad Laboratories, 1257 S. 32nd St., Richmond, Calif.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
ISOTOPES SPECIALTIES CO., 170 W. Providencia, Burbank, Calif. ADV. PG. 158, 229
PINTSCH BAMAG AG, Postfach 11, Butzbach, Germany ADV. PG. 63
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157

WELDING EQUIPMENT

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Air Reduction Sales Co., Div. of Air Reduction Co., Inc., 150 E. 42nd St., New York 17, N. Y.
Alloys Unlimited, Inc., 44—13 Vernon Blvd., Long Island City 1, N. Y.
American Agile Corp., P. O. Box 160, Bedford, Ohio
Edin Co., A Div. of Epsco, Inc., 207 Main St., Worcester, Mass.
Eisler Engineering Co., 760 S. 13th St, Newark 3, N. J.
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
General Electric Co., Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50, Pa.
Heraeus GmbH, W. C., 12-14 Heraeusstr., Hanau, Germany
INTERNATIONAL NICKEL CO., INC., 67 Wall St., New York 5, N. Y. ADV. PG. 114
L&B Welding Equipment, Inc., 2424 6th St., Berkeley, Calif.
Liquid Carbonic Div. of General Dynamics Corp., 3100 S. Kedzie Ave., Chicago 23, Ill.
Mallory & Co., Inc., P. R., 58 S. Gray St., Indianapolis 6, Ind.
Measurement Engineering, Ltd., Arnprior, Ontario, Canada
Metal & Thermit Corp., Rahway, N. J.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
Raytheon Mfg. Co., Nuclear Power Group, 28 Seyon St., Waltham 54, Mass.
Smith Corp., A. O., 3533 N. 27th St., Milwaukee 1, Wis.
Stewart Engineering Co., P. O. Box 277, Soquel, Calif.
UNITED SHOE MACHINERY CORP., ATOMIC POWER DEPT., RESEARCH DIV., Balch St., Beverly, Mass. ADV. PG. 78, 79
Vacuum Specialties Co., Inc., 34 Linden St., Somerville, Mass.
Vacuum Tube Products Co., Inc., 2020 Short St., Oceanside, Calif.
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Weldmatic Div. of Unitek Corp., 360 N. Halsted Ave., Pasadena, Calif.
Weltronic Co., 19500 W. Eight Mile Rd., Detroit 41, Mich.
WESTINGHOUSE ELECTRIC CORP., P. O. Box 868, Pittsburgh 30, Pa. ADV. PG. 7-10
Worthington Corp., Harrison, N. J.

WELL-LOGGING EQUIPMENT

BALL BROTHERS RESEARCH CORP., Industrial Park, Boulder, Colo. ADV. PG. 74
General Nuclear Co., 4957 Hollywood Blvd., Hollywood 27, Calif.
Hathaway Instrument Div., Hamilton Watch Co., 5800 E. Jewell, Denver, Colo.
HIGH VOLTAGE ENGINEERING CORP., S. Bedford St., Burlington, Mass. ADV. PG. 189
JOHNSON & ASSOCIATES, INC., WILLIAM B., P. O. Box 415, Mountain Lakes, N. J. ADV. PG. 268
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
Taller & Cooper, Inc., 75 Front St., Brooklyn, N. Y.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157

WINDOWS—Counter

Alexander Vacuum Research Inc., 285 Madison Ave., New York 17, N. Y.
Eberline Instrument Corp., P. O. Box 279, Santa Fe, N. M.
FORRO SCIENTIFIC CO., THE, 833 Lincoln St., Evanston, Ill. ADV. PG. 229
Nuclear Corp. of America, Inc., 400 Park Ave., New York 1, N. Y.
Peele Co., The, 47 Stewart Ave., Brooklyn 37, N. Y.
Techniques, Inc., P. O. Box 85, Hackensack, N. J.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Universal Industrial Equipment Co., 1625 Paterson Plank Rd., Secaucus, N. J.

WINDOWS—Shielding

See also ZINC BROMIDE

Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
Alloy Flange & Fitting Corp., 222 Eagle St., Brooklyn, N. Y.
AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Andel & Co., Inc., 5218 N. Kedzie Ave., Chicago 25, Ill.
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
Chance-Pilkington Optical Works, Pilkington Brothers, Ltd., St. Asaph, Flintshire, Great Britain
CORNING GLASS WORKS, Corning, N. Y. ADV. PG. 219
General Lead Construction Corp., 1800 Harrison Ave., Kearny, N. J.
Harty Co., Inc., R. V., 1433 Sloman Ave., Detroit 11, Mich.
KELLEY & CO., O. G., 98 Taylor St., Dorchester, Mass. ADV. PG. 64, 65
MANN MFG. CO., INC., 229 Burlington Rd., Clarendon Hills, Ill. ADV. PG. 253
Peele Co., The, 47 Stewart Ave., Brooklyn 37, N. Y.
PENBERTHY INSTRUMENT CO., HI-D DIV., 4301 6th Ave., S., Seattle 8, Wash. ADV. PG. 215
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
RAY-PROOF CORP., 843 Canal St., Stamford, Conn. ADV. PG. 272
Research Equipment Co., 1032 College Ave., Wheaton, Ill.
Techniques, Inc., P. O. Box 85, Hackensack, N. J.
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157

WIRE & CABLE—Radiation Resistant

AERO RESEARCH INSTRUMENT CO., 315 N. Aberdeen St., Chicago 7, Ill. ADV. PG. 217
Amphenol Electronics Corp., 1830 S. 54th Ave., Chicago 50, Ill.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
General Cable Corp., 420 Lexington Ave., New York 17, N. Y.
General Electric Co., Construction Materials Div., 1285 Boston Ave., Bridgeport 2, Conn.
Gordon Co., Claud S., 619 W. 30th St., Chicago 16, Ill.
Hallett Mfg. Co., 5710 Bowcroft St., Los Angeles 16, Calif.
Haveg Industries, Inc., Halocarbon Div., 950 Greenbank Rd., Wilmington 8, Del.
Hitemp Wires, Inc., 26 Windsor Ave., Mineola, N. Y.
Lewis Engineering Co., 52 Rubber Ave., Naugatuck, Conn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Phelps Dodge Copper Products Corp., 300 Park Ave., New York 22, N. Y.
PYRO-ELECTRIC, INC., 228 E. James St., Barrington, Ill. ADV. PG. 270
Revere Corp. of America, Wallingford, Conn.
Rex Corp., The, Hayward Rd., West Acton, Mass.
Sprague Electric Co., North Adams, Mass.
Sylvania Electric Products Inc., Parts Div., Warren, Pa.
TELEFLEX, INC., North Wales, Pa. ADV. PG. 240
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.
Zippertubing, Inc., 752 S. San Pedro St., Los Angeles 14, Calif.

X-RAY-DIFFRACTION APPARATUS

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Applied Research Labs., Inc., P. O. Box 1710, Glendale 5, Calif.
BAR-RAY PRODUCTS, INC., 209 25th St., Brooklyn 32, N. Y. ADV. PG. 103
General Radiological, Ltd., 15-18 Clipstone St., London, W. 1, England
HAMNER ELECTRONICS CO., Box 531, Princeton, N. J. ADV. PG. Second Cover
HARSHAW CHEMICAL CO., 1945 E. 97th St., Cleveland 6, Ohio ADV. PG. 44
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
Philips Electronics Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35
RADIATION INSTRUMENT DEVELOPMENT LAB., 5737 S. Halsted St., Chicago 21, Ill. ADV. PG. 271
Radio Corporation of America, Industrial Electronic Products Div., Camden 2, N. J.
St. John X-Ray Laboratory, Califon, N. J.
X-Ray Dept. of General Electric Co., 4855 Electric Ave., Milwaukee, Wis.

X-RAY EQUIPMENT—Industrial

See also RADIOGRAPHIC EQUIPMENT—X-RAY

AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
APPLIED RADIATION CORP., 2404 N. Main St., Walnut Creek, Calif. ADV. PG. 100, 101
Balteau Electric Corp., New & Meadow Sts., Stamford, Conn.
Bracke-Seib X-Ray Co., Inc., 16 Pelham Bay Park W., Pelham Manor, N. Y.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Radiological, Ltd., 15-18 Clipstone St., London, W. 1, England
HIGH VOLTAGE ENGINEERING CORP., S. Bedford St., Burlington, Mass. ADV. PG. 189
Hilger & Watts, Ltd., 98 St. Pancras Way, London, N. W. 1, England
Jem Penetrameter Mfg. Co., 122 Hampshire St., Cambridge 39, Mass.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 1, N. Y.
Philips Electronics Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y.
PHILIPS' GLOEILAMPENFABRIEKEN, N. V., Eindhoven, Holland. ADV. PG. 86
PICKER X-RAY CORP., 25 S. Broadway, White Plains, N. Y. ADV. PG. 35
Resitron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
St. John X-Ray Laboratory, Califon, N. J.
SHEFFIELD CORP., BENDIX AVIATION CORP., Fisher Bldg., Detroit 2, Mich. ADV. PG. 144, 145
TRACERLAB, INC., 1601 Trapelo Rd., Waltham 54, Mass. ADV. PG. 151, 152, 157
Warren Corp., The, 2901 Brighton Rd., Pittsburgh 12, Pa.
Westinghouse Electric Corp., X-Ray Div., 2519 Wilkens Ave., Baltimore 3, Md.
X-Ray Dept. of General Electric Co., 4855 Electric Ave., Milwaukee, Wis.

X-RAY TUBES

See TUBES—X-RAY

ZINC BROMIDE

See also CHEMICALS

AMERAY CORP., 25 Route #46, Kenvil, N. J. ADV. PG. 30
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Dow Chemical Co., Midland, Mich.
Fine Chemical Co., Inc., 250 W. 57th St., New York 19, N. Y.
MICHIGAN CHEMICAL CORP., RARE EARTH & THORIUM DIV., St. Louis, Mo. ADV. PG. 174
RAY-PROOF CORP., 843 Canal St., Stamford, Conn. ADV. PG. 272
Ver-Lac-Oid Chemical Co., 116 Broad St., New York 4, N. Y.

ZINC SULPHIDE

See CHEMICALS

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MANUFACTURERS INDEX

Including PRODUCTS • MATERIALS • SERVICES

A

ACF Industries, Inc., Nuclear Products-Erco Div., 508 Kennedy St., N. W., Washington 11, D. C.
AEG—ABT KEA, Hochhaus Sued, Frankfurt/Main, Germany
A.E.I.-John Thompson Nuclear Energy Co., Ltd., Radbroke Hall, Knutsford, Cheshire, England
AMF Atomics, A Div. of American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y.
Abbe Engineering Co., 50 Church St., New York 7, N. Y.
Abbeon Supply Co., 179-15 Jamaica Ave., Jamaica 32, N. Y.
Abbott Laboratories, Oak Ridge, Tenn.
Abrams Instrument Corp., 600-620 E. Shiawassee St., Lansing, Mich.
Accurate Sheet Metal & Mfg. Works, 2336-44 Milwaukee Ave., Chicago 47, Ill.
Ace Electronics Associates, Inc., 99 Dover St., Somerville 44, Mass.
Ace Engineering & Machine Co., Inc., Tomlinson Rd., Huntingdon Valley, Pa.
Acheson Colloids Co., Div. of Acheson Industries, Inc., 1631 Washington Ave., Port Huron, Mich.
Acme Brick Co., P. O. Box 425, Fort Worth 1, Texas
Acme Electric Corp., 31 Water St., Cuba, N. Y.
Acme Electric Heating Co., Inc., 1205 Washington St., Boston, Mass.
Acme Protection Equipment Co., 1299E Kalamazoo St., South Haven, Mich.
Acoustica Associates, Inc., 26 Windsor Rd., Mineola, N. Y.
Adams Co., Inc., R. P., 473 E. Park Drive, Buffalo 17, N. Y.
Adams & Westlake Co., Michigan St., Elkhart, Ind.
Adler's Metal Works, 1310 Germantown Ave., Philadelphia 22, Pa.
Admiral Corp., 3800 W. Cortland St., Chicago 47, Ill.
Advanced Products Co., 59 Broadway, North Haven, Conn.
Aero Research Instrument Co., 315 N. Aberdeen St., Chicago 7, Ill.
Aero Service Corp., 210 E. Cortland, Philadelphia 20, Pa.
Aerojet-General Corp., Architect-Engineer Div., 410 N. Citrus Ave., Covina, Calif.
Aerojet-General Nucleonics, P. O. Box 77, San Ramon, Calif.
Aeronutronic Systems, Inc., 1234 Air Way, Glendale, Calif.
Aeroquip Corp., Jackson, Mich.
Aerovox Corp., 740 Belleville Ave., New Bedford, Mass.
Air Controls, Inc., 2312 Superior Ave., Cleveland 14, Ohio
Air Engineering Co., 49 Hillside St., Watertown 72, Mass.
Air Marine Motors, Inc., 369 Bay View Ave., Amityville, N. Y.
Air-Maze Corp., 25000 Miles Rd., Cleveland, Ohio
Air Reduction Sales Co., A Div. of Air Reduction Co., Inc., 150 W. 42nd St., New York 17, N. Y.
Air & Refrigeration Corp., 439 Madison Ave., New York 17, N. Y.
Airborne Accessories Corp., 1414 Chestnut Ave., Hillside 5, N. J.
Airborne Instruments Labs., Div. of Cutler-Hammer, 160 Old Country Rd., Mineola, N. Y.
Alreco, Inc., 2323 Second Ave., Carmen, Schenectady, N. Y.
Airmatic Systems Corp., 441 Market St., Saddle Brook, Rochelle Park, N. J.
Airmatic Valve, Inc., 7313 Associate Ave., Cleveland 9, Ohio
Airmec Ltd., High Wycombe, Buckinghamshire, England
Airpax Products Co., Seminole Div., Fort Lauderdale, Fla.
Akron Metallic Gasket Co., The, 150 N. Union St., Akron, Ohio
Alcar Instruments Inc., 17 Industrial Ave., Little Ferry, N. J.
Alco Products, Inc., Schenectady 5, N. Y.
Alco Valve Co., 865 Kingsland Ave., St. Louis 5, Mo.
Alden Electronic & Impluse Recording Equipment Co., Westboro, Mass.
Alden Products Co., 118D N. Main St., Brockton, Mass.
Alexander Vacuum Research Inc., 285 Madison Ave., New York 17, N. Y.
Alfax Paper & Engineering Co., P. O. Box 125, Westboro, Mass.
Alite Div. of U. S. Stoneware Co., P. O. Box 119, Orrville, Ohio
All-Stainless Inc., 40 Rugg Road, Allston 34, Mass.
Allegany Instrument Co., Inc., Cumberland, Md.
Allegheny Ludlum Steel Corp., Oliver Bldg., Room 2020, Pittsburgh 22, Pa.
Allen-Bradley Co., 136 W. Greenfield Ave., Milwaukee 4, Wis.
Alliance Manufacturing Co., Lake Park Blvd., Alliance, Ohio
Allied Control Co., Inc., 2 East End Ave., New York 21, N. Y.
Allied Engineering & Production Corp., 242 Blanding Ave., Alameda, Calif.
Allied Lead Construction Co., 6836 S. Chicago Ave., Chicago, Ill.
Allied Plastics Supply Corp., 75 Cliff St., New York 38, N. Y.
Allied Radio Corp., 100 N. Western Ave., Chicago 80, Ill.
Allied Research Associates, Inc., 43 Leon St., Boston 15, Mass.
Allied Resinous Products Inc., Box 620, Conneaut, Ohio
Allies Products Corp., P. O. Box 188, Kendall Station, Miami, Fla.
Allis-Chalmers Mfg. Co., 935 S. 70th St., Milwaukee 1, Wis.
Allmetal Screw Products Co., 821 Stewart Ave., Garden City, N. Y.
Alloy Flange & Fitting Corp., 222 Eagle St., Brooklyn, N. Y.
Alloy Steel Products Co., 1329 W. Elizabeth Ave., Linden, N. J.
Alloys Unlimited, Inc., 44-13 Vernon Blvd., Long Island City 1, N. Y.
Aloe Scientific Div. of A. S. Aloe Co., 5650 Kingsbury Blvd., St. Louis 12, Mo.
Alpha Metals Inc., 56 Water St., Jersey City 4, N. J.
Aluminum Co. of America, Alcoa Bldg., Pittsburgh 19, Pa.
Ambory Corp., 21320 Stephenson, Hazel Park, Mich.
Amco Engineering Co., 7333 Ainslie St., Chicago 31, Ill.
Ameray Corp., 25 Route #46, Kenvil, N. J.
Amercoat Corp., 4807 Firestone Blvd., South Gate, Calif.
American Agile Corp., P. O. Box 168, Bedford, Ohio
American Air Filter Co., 215 Central Ave., Louisville 8, Ky.
American Blower Div., American Radiator & Standard Corp., 8111 Tireman Ave., Dearborn, Mich.
American Brass Co., Waterbury 20, Conn.
American Cast Iron Pipe Co., Special Products Div., 2930 N. 16th St., Birmingham, Ala.
American Durafilm Co., Inc., 2300 Washington St., Newton Lower Falls, Mass.
American Electro Metal Div. of Firth Stirling, Inc., 320 Yonkers Ave., Yonkers, N. Y.
American Electronic Laboratories, Inc., 121 N. 7th St., Philadelphia 6, Pa.
American Electronics, Inc., 1025 W. 7th St., Los Angeles 17, Calif.
American Gas Furnace Co., 130 Spring St., Elizabeth, N. J.
American Hollow Boring Co., 1948 Raspberry st., Erie 4, Pa.
American Instrument Co., Inc., 8030 Georgia Ave., Silver Spring, Md.
American Laundry Machinery Co., Norwood 12, Ohio
American Lava Corp., Titania Div., Manufacturers Rd., Chattanooga 5, Tenn.
American Metal Climax, Inc., The, 500 Fifth Ave., New York 36, N. Y.
American Meter Co., Pump Div., 13500 Philmont Ave., Philadelphia 16, Pa.
American Nuclear Science Corp., 61 Broadway, New York 6, N. Y.
American Optical Co., 28 Mechanic St., Southbridge, Mass.
American Optical Co., Instrument Div., Box A, Buffalo 15, N. Y.
American Potash & Chemical Corp., 3030 W. 6th St., Los Angeles 54, Calif.
American Products Mfg. Co., Inc., 8127-33 Oleander St., New Orleans 18, La.
American Research Corp., Route 6, Farmington, Conn.
American Silver Co., 36-07 Prince St., Flushing 54, N. Y.
American-Standard Atomic Energy Div., 1682 Broadway, Redwood City, Calif.
American-Standard Ross Heat Exhanger Division, Box 2081, Buffalo 5, N. Y.
American Sterilizer Co., Box 620, Erie, Pa.
American Television & Radio Co., 300 E. Fourth St., St. Paul 1, Minn.
American Thermo Electric Co., 7269 Santa Monica Blvd., Los Angeles 46, Calif.
American Time Products, Inc., 580 Fifth Ave., New York 36, N. Y.
American Tradair Corp., Sub. of Elco Electronics, Ltd., 34-01 30th St., Long Island City 6, N. Y
American Turbine Corp., 52 Williams St., New York 5, N. Y.
American Welding & Mfg. Co., Dietz Rd., Warren, Ohio
Ames Metal Products Co., 4323 S. Western Ave., Chicago, Ill.
Amglo Corp., 4333 Ravenswood Ave., Chicago 13, Ill.
Amp, Incorporated, Harrisburg, Pa.
Amp, Incorporated, Chemicals & Dielectrics Div., 155 Park St., Elizabethtown, Pa.
Amperex Electronic Corp., 230 Duffy Ave., Hicksville, N. Y.
Ampex Corp., Instrumentation Div., 934 Charter St., Redwood City, Calif.
Amperite Co., Inc., 561 Broadway, New York 12, N. Y.
Amphenol Electronics Corp., 1830 S. 54th Ave., Chicago 50, Ill.
Amplifier Corp. of America, 396 Broadway, New York 13, N. Y.
Analytical Measurements, Inc., 585 Main St., Chatham, N. J.
Anchor Metal Co., Inc., 966 Meeker Ave., Brooklyn 22, N. Y.
Anchor Plastics Co., Inc., 36-36 36th St., Long Island City 6, N. Y.
Andel & Co., Inc., 5218 N. Kedzie Ave., Chicago 25, Ill.
Andersen Laboratories, Inc., 501 New Park Ave., West Hartford 10, Conn.
Andersen Co., V. D., Div. of International Basic Economy Corp., 1935 W. 96th St., Cleveland 2, Ohio
Anderson Valve Works, 9th & Adams Ave., Marion, Ind.
Andrew Co., Otis, 231-233 W. Court St., Cincinnati 2, Ohio
Annin Co., The, Div. of The Annin Corp., 1040 S. Vail Ave., Monticello, Calif.
Ansco Division, General Aniline & Film Corp., Binghamton, N. Y.
Antara Chemicals, Div. of General Aniline & Film Corp, 435 Hudson St., New York 14, N. Y.
Anton Electronic Labs., Inc., 1226-38 Flushing Ave., Brooklyn 37, N. Y.
Applied Physics Corp., 2724 S. Peck Rd., Monrovia, Calif.
Applied Radiation Corp., 2404 N. Main St., Walnut Creek, Calif.
Applied Research Labs., Inc., P. O. Box 1710, Glendale 5, Calif.
Arapahoe Chemicals, Inc., 2800 Pearl St., Boulder, Colo.
Arco Co., 7301 Bessemer Ave., Cleveland 27, Ohio
Arde Associates, 75 Austin St., Newark 2, N. J.
Arenberg Ultrasonic Lab., Inc., 94 Green St., Jamaica Plain 30, Mass.
Armco Steel Corp., Middletown, Ohio
Armstrong Cork Co., Lancaster, Pa.
Arnhold Ceramics, Inc., 1 E. 57th St., New York 22, N. Y.
Arnold Engineering Co., Marengo, Ill.
Arnold Magnetics Corp., 4613 W. Jefferson Blvd., Los Angeles 16, Calif.
Artisan Metals Products Co., Inc., 63 Pond St., Waltham 53, Mass.
Asheville-Schoonmaker Mica Co., Inc., 900 Jefferson Ave., Newport News, Va.
Askania Regulator Co., 240 E. Ontario St., Chicago 11, Ill.
Assembly Products, Inc., Chesterland 6, Ohio
Associated Engineering Corp., 65 Kent St., Brookline 46, Mass.
Associated Engineering & Mfg. Corp., Glen Ridge, N. J.
Associated Nucleonics, Inc., 975 Stewart Ave., Garden City, N. Y.
Associated Research, Inc., 3777 W. Belmont, Chicago, Ill.
Associated Specialties Co., 1751 Main St., Orefield, Pa.
Associated Valve & Engineering Co., 1150 W. Marquette Rd., Chicago 21, Ill.
Astra, Inc., P. O. Box 226, Raleigh, N. C.
Astron Corp., 255 Grant Ave., East Newark, N. J.
Atkins & Merrill, South Sudbury, Mass.
Atkomatic Valve Co., Inc., 545 Abbott St., Indianapolis, Ind.
Atlantic Research Corp., Electromechanical Div., Alexandria, Va.
Atlas Engineering Co., 176 Blue Hill Ave., Roxbury, Mass.
Atlas Valve Co., 280 South St., Newark 5, N. J.
Atno Engineering Co., 173 W. Madison St., Chicago 2, Ill.
Atomation, Inc., 5959 S. Hoover St., Los Angeles 44, Calif.
Atomic Accessories Inc., 244-04 Jamaica Ave., Bellerose 26, N. Y.
Atomic Energy of Canada, Ltd., Commerical Products Div., P. O. Box 93, Ottawa, Ontario, Canada
Atomic Energy Waste Disposal Service, 5410 Bond St., Oakland 1, Calif.
Atomic Film Badge Corp., 244-02 Jamaica Ave., Bellerose 26, N. Y.
Atomic Laboratories, Berkeley, Calif.
Atomic Research Laboratory, 10717 Venice Blvd., Los Angeles 34, Calif.
Atomics International, A Div. of North American Aviation, Inc., Box 309, Canoga Park, Calif.
Atwood & Morrill Co., Salem, Mass.

Auburn Mfg. Co., The, 500 Stack St., Middletown, Conn.
Audio Instrument Co., Inc., 135 N. W. 14th St., New York 11, N. Y.
Aurora Pump Div., The New York Air Brake Co., 48 Loucks St., Aurora, Ill.
Austenal, Inc., 224 E. 39th St., New York 16, N. Y.
Austin Co., The, 16112 Euclid Ave., Cleveland 12, Ohio
Autocall Co., Shelby, Ohio
Autoclave Eng. Sales Corp., 2930 W. 22nd St., Erie, Pa.
Automatic Electric Sales Corp., North Lake, Ill.
Automatic & Precision Mfg. Co., 252 Hawthorne Ave., Yonkers 5, N. Y.
Automatic Switch Co., 56-N Hanover Rd., Florham Park, N. J.
Automatic Timing & Controls, Inc., King of Prussia, Pa.
Automotive & Aircraft Div., American Chain & Cable Co., Inc., 601 Stephenson Bldg., Detroit, Mich.
Autotron Co., Box 722, Danville, Ill.
Autotronics, Inc., Rt. 1, Box 812, Florissant, Mo.
Avondale Marine Ways, Inc., P. O .Box 1030, New Orleans, La.
Avtron Mfg., Inc., 10409 Meech St., Cleveland, Ohio
Axel Bros., Inc., Electronics Div., 134-20 Jamaica Ave., Jamaica 18, N. Y.

B

B-I-F Industries, Inc., 530-D Harris Ave., Providence 1, R. I.
BJ Electronics, Borg-Warner Corp., 3300 Newport Ave., Santa Ana, Calif.
B/W Controller Corp., 2200 E. Maple Rd., Birmingham, Mich.
Babcock Relays, Inc., 1640 Monrovia Ave., Costa Mesa, Calif.
Babcock & Wilcox Co., The, 161 E. 42nd St., New York 17, N. Y.
Babcock & Wilcox Co., Tubular Products Div., Beaver Falls, Pa.
Babcock & Wilcox Ltd., Babcock House, 209 Euston Rd., London N. W. 1, England
Bache & Co., Semon, 636 Greenwich St., New York 14, N. Y.
Bacon Industries, Inc., 192 Pleasant St., Watertown, Mass.
Badger Mfg. Co., 230 Bent St., Cambridge 41, Mass.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Baird-Atomic, Inc., 33 University Rd., Cambridge 38, Mass.
Baird & Tatlock (London) Ltd., Freshwater Rd., Chadwell Heath, Essex, England
Bakelite Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
Baker & Adamson Products, General Chemical Div., of Allied Chemical Corp., 40 Rector St., New York 6, N. Y.
Baker Chemical Co., J. T., Phillipsburg, N. J.
Balco Research Labs, 49-53 Edison Place, Newark 2, N. J.
Baldwin Instrument Co., Ltd., Brooklands Works, Dartford, Kent, England
Baldwin-Lima-Hamilton Corp., Electronics & Instrumation Div., 42 Fourth Ave., Waltham 54, Mass.
Ball Brothers Research Corp., Industrial Park, Boulder, Colo.
Ballou & Co., Inc. B. A., 61 Peck St., Providence, R. I.
Balteau Electric Corp., New & Meadow Sts., Stamford, Conn.
Barber-Colman Co., Wheelco Div., 1700 Rock St., Rockford, Ill.
Barco Mfg. Co., 500 N. Hough St., Barrington, Ill.
Barium & Chemicals, Inc., Willoughby, Ohio
Barker Sales Co., 339 S. Broad Ave., Ridgefield, N. J.
Barker & Williamson, Inc., Canal & Beaver, Bristol, Pa.
Barnes Development Co., 13 W. Baltimore Pike, Lansdowne, Pa.
Barnes Co., W. F. & John, 201 S. Water St., Rockford, Ill.
Barnstead Still & Sterilizer Co., 84 Lanesville Terrace, Boston 31, Mass.
Bar-Ray Products, Inc., 209 25th St., Brooklyn 32, N. Y.
Barry Controls Inc., 752 Pleasant St., Watertown, Mass.
Barton Instrument Corp., 580 Monterey Pass Rd., Monterey Park, Calif.
Basic, Inc., 845 Hanna Bldg., Room 845, Cleveland 14, Ohio
Bausch & Lamb Optical Co., 630 St. Paul St., Rochester 2, N. Y.
Beach-Russ Co., 50 Church St., New York 7, N. Y.
Bean & Co., Morris, Yellow Springs 15, Ohio
Becket & Associates, Welton, 5657 Wilshire Blvd, Los Angeles 36, Calif.
Beckman/Berkeley Division, 2200 Wright Ave., Richmond 3, Calif.
Beckman/Scientific & Process Instruments Div., Beckman Instruments, Inc., 2500 Fullerton Rd., Fullerton, Calif.
Beck's Inc., 298-300 E. Fifth St., St. Paul 1, Minn.
Belfab Corp., The, Municipal Airport, Daytona Beach, Fla.
Belmont Smelting & Refining Works, Inc., 322 Belmont Ave., Brooklyn 7, N. Y.
Belock Instrument Corp., 111-01 14th Ave., College Point, N. Y.
Bendix Aviation Corp., Fisher Bldg., Detroit 2, Mich.
Bendix Aviation Corp., Bendix-Pacific Div., Fisher Bldg., Detroit 2, Mich.
Bendix Aviation Corp., Cincinnati Div., Fisher Bldg., Detroit 2, Mich.
Bendix Aviation Corp., Computer Div., Fisher Bldg., Detroit 2, Mich.
Bently Scientific Co., 2811 Seventh St., Berkeley 10, Calif.
Bergen Pipesupport Co., 50 Church St., New York, N. Y.
Berk & Co., Inc., F. W., Park Place East, Wood Ridge, N. J.
Berkeley Crystal Co., 1740 University Ave., Berkeley 3, Calif.
Berkshire Laboratories, 586 Bank Village, Greenville, N. H.
Bernard-Franklin Co., Inc., 4155 E. Hedley St., Philadelphia 37, Pa.
Beryllium Corp., P. O. Box 1462, Reading, Pa.
Beta Electric Corp., A Div. of Sorensen Co., Inc., Richards Ave., South Norwalk, Conn.
Bethlehem Steel Co., Bethlehem, Pa.
Bettinger Corp., Milford, Mass.
Beva Laboratory, 22 Parker Ave., P. O. Box 478, Trenton 3, N. J.
Biach Industries, Inc., 10 Indian Spring Rd., Cranford, N. J.
Biggs Co., Carl H., 2255 Barry Ave., West Los Angeles 64, Calif.
Bio-Rad Laboratories, 1257 S. 32nd St., Richmond, Calif.
Bios Laboratories, Inc., 17 W. 60th St., New York 23, N. Y.
Bird Electronic Corp., 1800 E. 38th St., Cleveland 14, Ohio
Bishop & Co., J., Platinum Works, Malvern, Pa.
Black, Sivalls & Bryson, Inc., 7500 E. 12th St., Kansas City 26, Mo.
Blaw-Knox Co., 300 Sixth Ave., N. B., Pittsburgh 22, Pa.
Blickman, Inc., S., 7900 Gregory Ave., Weehawken, N. J.
Blodgett & Colley, Inc., 16 Court St., Boston 8, Mass.
Blonder-Tongue Laboratories, Inc., 9-25 Alling St., Newark 2, N. J.
Bogen Co., David, Dept. MHN, P. O. Box 500, Paramus, N. J.
Boque Electric Mfg. Co., 52 Iowa Ave., Paterson 3, N. J.
Bomac Laboratories, Inc., Salem Rd., Beverly, Mass.
Bonney-Floyd Co., The, 611 Marion Rd., Columbus 7, Ohio
Boonton Radio Corp., Boonton, N. J.
Booz-Allen Applied Research, Inc., 430 Greenbay Rd., Kennilworth, Ill.
Borden Chemical Co., A Div. of The Borden Co., 350 Madison Ave., New York 17, N. Y.
Borg Equipment Div., The George W. Borg Corp., 120 S. Main St., Janesville, Wis.
Borg-Warner Corp., 310 S. Michigan Ave., Chicago 4, Ill.
Borolite Corp., 320 Yonkers Ave., Yonkers, N. Y.
Bourns Laboratories, Inc., 6135 Magnolia Blvd., Riverside, Calif.
Bowmar Instrument Corp., 8000 Bluffton Rd., Fort Wayne, Ind.
Bracke-Seib X-Ray Co., Inc., 16 Pelham Bay Park W., Pelham Manor, N. Y.
Bradley Laboratories, Inc., 168 Columbus Ave., New Haven 10, Conn.
Brady Co., W. H., 727 W. Glendale Ave., Milwaukee 9, Wis.
Bram Metallurgical-Chemical Co., 820 65th Ave., Philadelphia 26, Pa.
Branson Corp., Jefferson Rd., Whippany, N. J.
Branson Instruments, Inc., 57 Brown House Rd., Stamford, Conn.
Branson Ultrasonic Corp., 1 Brown House Rd., Stamford, Conn.
Breeze Corporations, Inc., 700 Liberty Ave., Union, N. J.
Breuer Electric Mfg. Co., 5100 N. Ravenswood Ave., Chcago 40, Ill.
Brew & Co., Inc., Richard D., Airport Rd., Box 339, Concord, N. H.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
Bristol Co., P. O. Box 1790 NBG, Waterbury 20, Conn.
Brooks & Perkins, Inc., 261 Constitution Ave., N. W., Washington 1, D. C.
Brooks Rotameter Co., Box 432, Lansdale, Pa.
Brown Morse Co., Muskegon, Mich.
Bruel & Kjaer, Naerum, Denmark
Brush Beryllium Co., 4301 Perkins Ave., Cleveland 3, Ohio
Brush Instruments Div. of Clevite Corp., 3405 Perkins Ave., Cleveland 14, Ohio
Bud Radio, Inc., 2118 E. 55th St., Cleveland 3, Ohio
Budd Co., Nuclear Systems Div., 2950 Roberts Ave., Philadelphia 32, Pa.
Buehler, Ltd., 2120 Greenword St., Evanston, Ill.
Buffalo Pumps Div. of Buffalo Forge Co., North Tonawanda, N. Y.
Buggie & Co., H. H., Box 817, Toledo 1, Ohio
Buhl Optical Co., 1009 Beech Ave., Pittsburgh 33, Pa.
Bullard Co., E. D. 2680 Bridgeway, Sausalito, Calif.
Burgess Battery Co., Freeport, Ill.
Burke & James, Inc., 321 S. Wabash, Chicago, Ill.
Burling Instrument Co., Inc., 16 River Rd., Chatham, N. J.
Burndept Ltd., West St., Erith, Kent, U. K.
Burns & Roe, Inc., 160 West Broadway, New York 13, N. Y.
Burrell Corp., 2223 Fifth Ave., Pittsburgh 19, Pa.
Burroughs Corp., Electronic Tube Div., P. O. Box 1226 Plainfield, N. J.
Bush Transformer Corp., 707 North St., Endicott, N. Y.
Bussmann Mfg. Div., McGraw-Edison Co., University at Jefferson, St. Louis 7, Mo.
Byron Jackson Pumps, Inc., Sub. of Borg-Warner Corp, P. O. Box 2017A, Terminal Annex, Los Angeles 54, Calif.

C

CBS-Hytron, a Division of Columbia Broadcasting System, Inc., 100 Endicott St., Danvers, Mass.
CGS Laboratories, Inc., Ridgefield, Conn.
California Research Corp., 200 Bush St., San Francisco 4, Calif.
Caltron Products Co., 3518 W. Pico Blvd., Los Angeles 19, Calif.
Cambridge Corp., 2 Industrial Park, Lowell, Mass.
Cambridge Filter Corp., 276 Erie Blvd., East, Syracuse 1, N. Y.
Cambridge Instrument Co., Inc., 3107 Grand Central Terminal, New York 17, N. Y.
Cambridge Smelting Co., 100 Pacific St., Cambridge, Mass.
Cambridge Thermionic Corp., 445 Concord Ave., Cambridge 38, Mass.
Cameron Iron Works, P. O. Box 1212, Houston, Texas
Canadair Ltd., P. O. Box 6087, Montreal, Que., Canada
Canadian Applied Research, Ltd., 1500 O'Connor Drive, Toronto 16, Ontario, Canada
Canadian Radium & Uranium Corp., 630 Fifth Ave., New York 20, N. Y.
Cannon Electric Co., 3208 Humboldt St., Los Angeles 31, Calif.
Carboline Co., 32 Hanley Industrial Court, St. Louis 17, Mo.
Carborundum Co., Globar Div., Hyde Park Blvd., Niagara Falls, N. Y.
Carborundum Co., The, Refractories Div., Perth Amboy, N. J.
Carborundum Metals Co., Div., of the Carborundum Co., P. O. Box 32, Akron, N. Y.
Cardwell Condenser Corp., 97 Whiting St., Plainville, Conn.
Carlson, Inc., G. O., Thorndale, Pa.
Carpenter Mfg. Corp., 6723 Denison Ave., Cleveland 2, Ohio
Carpenter Steel Co., 107 W. Bern St., Reading, Pa.
Carpenter Steel Co., Alloy Tube Div., Union, N. J.
Carrier Corp., Carrier Parkway, Syracuse 1, N. Y.
Carter Controls Inc., 2800 Benice Rd., Lansing, Mich.
Carter Motor Co., 2742 W. George St., Chicago 18, Ill.
Cascade Research Corp., 33 Victory Lane, Los Gatos, Calif.
Cash Co., A. W., P. O. Box 551, Decatur, Ill.
Catalytic Construction Co., 1528 Walnut St., Philadelphia 2, Pa.
Celluc Electronic Co., 3 Traverse Terrace, Malden 48, Mass.
Central Electronic Mfrs., 2 Richwood Place, Denville, N. J.
Central Research Laboratories, Inc., Red Wing, Minn.
Central Scientific Co., 1700 Irving Park Rd., Chicago 13, Ill.
Central Transformer Co., 910 W. Jackson Blvd., Chicago 7, Ill.
Centralab Div. of Globe-Union Inc., 900 E. Keefe Ave., Milwaukee 1, Wis.
Century Electronics & Instruments, Inc., P. O. Box 6216, Tulsa 10, Okla.
Cerro de Pasco Sales Corp., 300 Park Ave., New York 22, N. Y.
Chance-Pilkington Optical Works, Pilkington Brothers Ltd., St. Asaph, Flintshire, Great Britain
Chandler & Stedman, 398 Newton St., Waltham 54, Mass.
Charleston Rubber Co., 7 Stark Industrial Park, Charleston, S. C.
Chase Brass & Copper Co., Inc., 236 Grand St., Waterbury 20, Conn.
Chem-Pure Service Co., 762 Industrial Rd., San Carlos, Calif.
Chemical Commerce, 166 Clifford St., Newark 5, N. J.
Chemical Development Corp., Endicott St., Danvers, Mass.
Chemical Process Co., Redwood City, Calif.
Chempump Corp., 1300 E. Mermaid Lane, Philadelphia 18, Pa.
Chicago Aerial Industries, Inc., 1900 Hawthorne Ave., Melrose Park, Ill.
Chicago-Allis Mfg. Corp., 103 N. Green St., Chicago 7, Ill.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago 22, Ill.
Chicago Bridge & Iron Co., 1305 W. 105th St., Chicago 43, Ill.
Chicago Gasket Co., 1271 W. North Ave., Chicago 22, Ill.
Chicago Pump Co., 624 Diversey Parkway, Chicago 14, Ill.
Chicago Steel Tank Co., 6400 W. 66th St., Chicago, Ill.
Christiansen Co., C. B., 164 Pennington St., Newark, N. J.
Christie Electric Corp., 3410 W. 67th St., Los Angeles 43, Calif.
Chromalloy Corp., 450 Tarrytown Rd., White Plains, N. Y.
Chromium Corp. of America, Box 1229, Waterbury 20, Conn.

NUCLEAR AND ALLIED PRODUCTS

Cinema Engineering Co., Div. of Aerovox Corp., 1100 Chestnut St., Burbank, Calif.
City Chemical Corp., 132 W. 22nd St., New York, N. Y.
Clarage Fan Co., 719 Porter St., Kalamazoo, Mich.
Clark Bros. Co., Div. of Dresser Operations, Inc., Lincoln Ave. & Fifth St., Olean, N. Y.
Clark Controller Co., 1146 E. 152nd St., Cleveland 10, Ohio
Clark Mfg. Co., 1830 E. 38th St., Cleveland 14, Ohio
Clarostat Mfg. Co., Inc., Dover, N. H.
Clay-Adams, Inc., 141 E. 25th St., New York 10, N. Y.
Clegg Laboratories, Div. of Clegg, Inc., Ridgedale & Hanover Aves., Morristown, N. J.
Cleveland Graphite Bronze Div. of Clevite Corp., 17000 St. Clair Ave., Cleveland 10, Ohio
Cleveland Hard Facing, 3047 Stillson Ave., Cleveland 5, Ohio
Clevite Transistor Products, A Div. of The Clevite Corp., 241-257 Crescent St., Waltham 54, Mass.
Clifton Precision Products Co., Broadway & Marple Ave., Clifton Heights, Pa.
Climax Molybdenum Co., Div. of The American Metal Climax, Inc., 500 Fifth Ave., New York 36, N. Y.
Cohn Corp., Sigmund, 121 S. Columbus Ave., Mt. Vernon, N. Y.
Cole Electric Co., 8439 Stellar Drive, Culver City, Calif.
Collins Corp., G. L., 2820 Hullett St., Long Beach, Calif.
Colorado Research Corp., Broomfield Heights, Colo.
Columbia-National Corp., 70 Memorial Drive, Cambridge 42, Mass.
Columbia Technical Corp., 61-02 31st Ave., Woodside 77, N. Y.
Comar Electric Co., 3349 W. Addison St., Chicago 18, Ill.
Combustion Engineering, Inc., 200 Madison Ave., New York 16, N. Y.
Cominco Metal Sales Div., 215 St. James St., W., Montreal 1, Canada
Commercial Filters Corp., 2 Main St., Melrose 76, Mass.
Communication Accessories Co., Lee's Summit, Mo.
Computer Control Co., Inc., 92 Broad St., Babson Park, Wellesley 57, Mass.
Computer Instruments Corp., 92 Madison Ave., Hampstead, N. Y.
Computer Usage Co., Inc., 18 E. 41st St., New York 17, N. Y.
Condenser Products Div. of New Haven Clock & Watch Co., 140 Hamilton St., New Haven, Conn.
Condenser Service & Engineering Co., Inc., 150 Observer Highway, Hoboken, N. J.
Conneaut Rubber & Plastic Div. of U. S. Stoneware Co., Commerce St., Conneaut, Ohio
Connecticut Hard Rubber Co., New Haven 9, Conn.
Conoflow Corp., 2100 Arch St., Philadelphia 3, Pa.
Conrad Inc., 141 Jefferson St., Holland, Mich.
Consolidated Controls Corp., Durant Ave., Bethel, Conn.
Consolidated Electrodynamics Corp., 300 N. Sierra Madre Villa, Pasadena, Calif.
Consolidated Electrodynamics Corp., Rochester Div., 1775 Mt. Read Blvd., Rochester, N. Y.
Consolidated Reactive Metals Inc., 43 W. 46th St., New York 46, N. Y.
Consolidated Western Steel Div., U. S. Steel Corp., P. O. Box 2015, Terminal Annex, Los Angeles 54, Calif.
Constantine Engineering Laboratories Co., 70 Island Ave., Mahwah, N. J.
Continental Air Filters, Inc., 2520 Helm St., Louisville, Ky.
Continental Carbon Div. of Wirt Co., 5221 Greene St., Philadelphia 44, Pa.
Continental Connector Corp., Div. of DeJur Amsco Corp., Woodside 77, N. Y.
Continental Copper & Steel Industries, Alloy Fabricators Div., 500 Market St., Perth Amboy, N. J.
Continental-Diamond Fibre Corp., Newark, Del.
Control A Div. of Magnetics, Inc., Box 391, Butler, Pa.
Control Products Inc., 306 Sussex St., Harrison, N. J
Controlex Corp. of America, P. O. Box 511, Westchester County Airport, White Plains, N. Y.
Controlled Atmosphere Enclosures Mfg. Co., 1061 E. 8th St., Jacksonville 6, Fla.
Controls Co. of America, 2450 N. 32nd St., Milwaukee 45, Wis.
Controls for Radiation, Inc., 130 Alewife Brook Parkway, Cambridge 40, Mass.
Convair Div. of General Dynamics Corp., San Diego 12, Calif.
Cook Electric Co., 2700 Southport Ave., Chicago 14, Ill.
Cooper Alloy Corp., Bloy St. & Ramsey Ave., Hillside 5, N. J.
Cooper Co., D. C., 1467 S. Michigan Ave., Chicago, Ill.
Cooper Metallurgical Associates, Box 3991, Cleveland 20, Ohio
Copper-Trent Blueprint & Microfilm Corp., 2701 Wilson Blvd., Arlington 1, Va.
Copous Engineering Corp., 334 Park Ave., Worcester, Mass.
Corley Co., Inc., 103 E. Main St., Plainville, Conn.
Cornell-Dubilier Electric Corp., South Plainfield, N. J.
Corning Glass Works, Corning, N. Y.
Corrosite Corp., 64 S. Sixth St., Brooklyn 11, N. Y.
Cosmic Instruments, Inc., 50 Broadway, New York 4, N. Y.
Cossor Instruments, Ltd., Cossor House, Highbury Grove, London, N5, England
Couch Ordnance Inc., Relay Div., 3 Arlington St., North Quincy 71, Mass.
Cox & Co., Inc., 115 E. 23rd St., New York 10, N. Y.
Cramer Controls Corp., Box 13, Centerbrook, Conn.
Crane Co, 836 S. Michigan Ave., Chicago 5, Ill.
Crane Packing Co., 6400 Oakton St., Morton Grove, Ill.
Crawford Fitting Co., 884 E. 140th St., Cleveland 10, Ohio
Croll-Reynolds Engineering Co., 17 John St., New York 38, N. Y.
Crosby Valve & Gage Co., 43 Kendrick St., Wrentham, Mass.
Cross Co., H., 15 Beekman St., New York 38, N. Y.
Crossroads Marine Disposal Corp., 267 Wharf, Boston, Mass.
Crucible Steel Co. of America, Dept. N.B.G., Box 2518, Pittsburgh 30, Pa.
Crystal Research Labs., Inc., 29 Allyn St., Hartford 3, Conn.
Crystals Inc., 123 Woodland Ave., Dept. N.B.G., Westwood, N. J.
Crystals S. A., Case Mont Blanc 281, Geneva, Switzerland
Cubic Corp., 5575 Kearny Villa Rd., San Diego 11, Calif.
Cuno Engineering Corp., 80 S. Vine St., Meriden, Conn.
Curtiss-Wright Corp., Electronics Div., 631 Central Ave., Carlstadt, N. J.
Curtiss-Wright Co., Metal Processing Div., 760 Northland Ave., Buffalo, N. Y.
Curtiss-Wright Corp., Princeton Div., Princeton, N. J.
Curtiss-Wright Corp., Research Div., Quehanna, Pa.
Custodis Construction Co., Inc., 157 Chambers St., New York, N. Y.
Custom Lubricant Co., 743 Dwight Way, Berkeley 10, Calif.
Custom Scientific Instruments, Inc., P. O. Box 170, Kearny, N. J.
Cutler-Hammer, Inc., 412 N. 12th St., Milwaukee 1, Wis.
Cyclotron Specialties Co., Moraga 8, Calif.

D

D & R Ltd., 402 E. Gutierrez St., Santa Barbara, Calif.
Dage Television Div. of Thompson Products, Inc., 10th & Sheridan, Michigan City, Ind.
Dahl Co., Inc., G. W. Tupelo St., Bristol, R. I.
Dajac Laboratories, The Borden Co., Chemical Div., Leominster, Mass.
Dale Products, Inc., Columbus, Neb.
Daimo Victor Co., Div. of Textron, Inc., 1515 Industrial Way, Belmont, Calif.
Data-Control Systems, Inc., 39 Rose St., Danbury, Conn.
Datamatic Corp., 151 Needham St., Newton Highlands 61, Mass.
Davco Co., The, Route 10, Livingston, N. J.
Davis Emergency Equipment Co., Davis Instrument Div., 47 Halleck St., Newark 4, N. J.
Davison Chemical Div. of W. R. Grace Co., Rare Earths Dept., Box 488, Pompton Plains, N. J.
Davison Chemical Div. of W. R. Grace Co., Reactor Materials Plant, P. O. Box 218, Erwin, Tenn.
Dawe Instruments Ltd., 99-101 Uxbridge Rd., Ealing, London W.5, England
Daystrom Transicoil Corp., Worcester, Pa.
Dayton Electric Mfg. Co., 126 S. Oakley Blvd., Chicago 12, Ill.
De Laval Steam Turbine Co., Trenton 2, N. J.
Del Electronics Corp., 521 Homestead Ave., Mount Vernon, N. Y.
Delta Chemical Works, 21 W. 60th St., New York 23, N. Y.
Deltime, Inc., 608 Fayette Ave., Mamaroneck, N. Y.
Deltron, Inc., 2905 N. Leithgow St., Philadelphia 23, Pa.
DeMornay-Bonardi, Inc., 780 S. Arroyo Parkway, Pasadena, Calif.
Denison Engineering Div., American Brake Shoe Co., 1160 Dublin Road, Columbus 16, Ohio
Designers for Industry, Inc., 4241 Fulton Parkway, Cleveland 9, Ohio
Detroit Controls Div. of American-Standard, 100 Morse St., Norwood, Mass.
Devco Engineering Inc., Control Systems Div., Pier Lane West, Caldwell Township, Caldwell, N. J.
DeVilbiss Co., 300 Phillips Ave., Toledo, Ohio
Devtron Engineering, 1 Winslow St., Redwood City, Calif.
Dewey & Co., Inc., G. C., 202 E. 44th St., New York 36, N. Y.
DeZurik Corp., Sartell, Minn.
Dia-Chrome Co., 722 S. Verdugo Rd., Glendale, Calif.
Dialight Corp., 60 Stewart Ave., Brooklyn 37, N. Y.
Diamond Antenna & Microwave Corp., 7 North Ave., Wakefield, Mass.
Diamond Power Specialty Corp., Lancaster, Ohio
Di-AN Controls, Inc., 40 Leon St., Boston 15, Mass.
Dian Laboratories, Inc., 611 Broadway, New York 12, N. Y.
Dietz Co., Inc., Henry G., 12-16 Astoria Blvd., Long Island City 2, N. Y.
Dice Co., J. W., Englewood 41, N. J.
Digitran Co., The, 45 W. Union St., Pasadena, Calif.
Division Lead Co., 7742 W. 61st Place, Summit, Ill.
Donner Scientific Corp., 888 Galindo St., Concord, Calif.
Doran Co., A. V., 950 Francis Place, St. Louis, Mo.
Dorr-Oliver, Inc., Barry Place, Stamford, Conn.
Douglas Radio Labs., 176 Norfolk Ave., Boston 19, Mass.
Dow Chemical Co., Midland, Mich.
Dow Corning Corp., Midland, Mich.
Doyle & Roth Mfg. Co., Inc., 136-150 24th St., Brooklyn 32, N. Y.
Dressen-Barnes Corp., 250 N. Vinedo Ave., Pasadena 8, Calif.
Dresser Mfg. Div., Dresser Industries, Inc., 41 Fisher Ave., Bradford, Pa.
Drico Industrial Corp., 100 8th St., Passaic, N. J.
Driver Co., Wilbur B., 1875 McCarter Highway, Newark 4, N. J.
Driver-Harris Co., 201 Middlesex St., Harrison, N. J.
Du-Co Ceramics Co., Box 587, Butler 8, Pa.
DuMont Labs., Inc., Allen B., 760 Bloomfield Ave., Clifton, N. J.
Dunham-Bush, Inc., 179 South St., West Hartford 10, Conn.
du Pont de Nemours & Co., Inc., E. I., Wilmington 98, Del.
Durakool, Inc., 1010 N. Main St., Elkhart, Ind.
Duralab Equipment Corp., 980 Linwood St., Brooklyn 8, N. Y.
Durametallic Corp., Factory St., Kalamazoo, Mich.
Durant Mfg. Co., 1996 N. Buffum St., Milwaukee 1, Wis.
Duriron Co., Inc., 450 N. Findlay St., Dayton 4, Ohio
Dychro Corp., 12 Centre Ave., Newton 58, Mass.
Dyna-Empire, Inc., 1075 Stewart Ave., Garden City, N. Y.
Dynamic Instrument Co., Inc., 28 Carlton St., Cambridge, Mass.
Dynatron Radio, Ltd., St. Peter's Rd., Furze Platt, Maidenhead, Berks, England

E

E.M.I. Electronics Ltd., Hayes, Middlesex, England
E S C Corp., 534 Bergen Blvd., Palisades Park, N. J.
Eagle-Picher Co., Cincinnati, Ohio
Eagle Signal Corp., 202 20th St., Moline, Ill.
Earl Paint Corp., 5520 S. Shore Drive, Chicago 37, Ill.
Eastern Air Devices, Inc., 385 Central Ave., Dover, N. H.
Eastern Chemical Corp., 34 Spring St., Newark 4, N. J.
Eastern Industries, Inc., 100 Skiff St., Hamden, Conn.
Eastman Kodak Co., 343 State St., Rochester 4, N. Y.
Eaton-Dikeman Co., Mount Holly Springs, Pa.
Ebasco Services, Inc., 2 Rector St., New York 6, N. Y.
Eberbach Corp., Ann Arbor, Mich.
Eberline Instrument Corp., P. O. Box 279, Santa Fe, N. M.
Ebert Electronics Corp., 212-26 Jamaica Ave., Queens Village 28, N. Y.
Eclipse Fuel Engineering Co., 1100 Buchanan, Rockford, Ill.
Eclipse-Pioneer Div., Bendix Aviation Corp., Fisher Bldg., Detroit 2, Mich.
Eco Engineering Co., 12 New York Ave., Newark 1, N. J.
Edcliff Instruments, Inc., 1711 S. Mountain Ave., Monrovia, Calif.
Eder Instrument Co., Inc., 2293 N. Clybourn Ave., Chicago 14, Ill.
Edgerton, Germeshausen & Grier, Inc., 160 Brookline Ave., Boston 15, Mass.
Edin Co., A Div. of Epsco, Inc., 207 Main St., Worcester, Mass.
Edison Industries, Thomas A., Instrument Div., West Orange, N. J.
Edko Electronics Engineering Co., 202 Grand St., Brooklyn 11, N. Y.
Edlow Lead Co., 729 Bank St., Columbus 16, Ohio
Edward Valves, Inc., 1200 W. 145th St., East Chicago, Ind.
Eichner Instruments Co., L. C., 19 Sebago St., Clifton, N. J.
Elcor Div., The Scranton Corp., 4059 W. North Ave., Chicago 39, Ill.
Eisler Engineering Co., 760 S. 13th St., Newark 3, N. J.
Eitel-McCullough, Inc., 301 Industrial Way, San Carlos, Calif.
Elcor, Inc., Box 354, McLean, Va.
Eldorado Electronics Co., 2821 10th St., Berkeley, Calif.
Electric Auto-Lite Co., General Products Group, Toledo 1, Ohio
Electric Boat Div., General Dynamics Corp., Groton, Conn.
Electric Indicator Co., Inc., Camp Ave., Stamford, Conn.
Electric Machinery Mfg. Co., 800 Central Ave., Minneapolis 13, Minn.
Electric Products Co., 1725 Clarkstone Rd., Cleveland 12, Ohio
Electric Regulator Corp., Norwalk, Conn.
Electric Steel Foundry Co., 2165 NW 25th Ave., Portland 10, Ore.
Electric Tachometer Corp., 68th & Upland Sts., Philadelphia 42, Pa.
Electrical & Physical Instrument Corp., 42-19 27th St., Long Island City 1, N. Y.
Electro Chemical Engineering & Mfg. Co., 750 N. Broad St., Emmaus, Pa.
Electro Data Div. of Burroughs Corp., 460 Sierra Madre Villa, Pasadena, Calif.
Electro Engineering Works, 401 Preda St., San Leandro, Calif.

Electro Measurements, Inc., 7524 SW Macadam Ave., Portland, Ore.
Electro Medical Lab., Inc., South Woodstock 6, Vt.
Electro Metallurgical Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
Electro-Physics Co., 287-L Broadway, New York 7, N. Y.
Electro Technical Products Div. of Sun Chemical Corp., 113 E. Centre St., Nutley, N. J.
Electromation Co., 1646 18th St., Santa Monica, Calif.
Electronic Assistance Corp., 20 Bridge Ave., Red Bank, N. J.
Electronic Associates, Inc., Long Branch, N. J.
Electronic Communications, Inc., 1501 72nd St., N., St. Petersburg, Fla.
Electronic Control Corp., 1573 E. Forest Ave., Detroit 7, Mich.
Electronic Engineering Co. of California, 1601 E. Chestnut St., Santa Ana, Calif.
Electronic Measurements Co., Inc., Lewis St. & Maple Ave., Eatontown, N. J.
Electronic Mechanics, Inc., 101 Clifton Blvd., Clifton, N. J.
Electronic Processes Corp., 2190 Folsom St., San Francisco 10, Calif.
Electronic Products Co., 111 E. Third St., Mount Vernon, N. Y.
Electronic Tube Corp., 1200 E. Mermaid Lane, Philadelphia 18, Pa.
Electronics Research Labs., 85 Surrey St., Brighton 35, Mass.
Electrons, Inc., 127 Sussex Ave., Newark 3, N. J.
Elgin Softener Corp., 179 S. Grove Ave., Elgin, Ill.
Ellen, M. W., 7209 W. Adams St., Forest Park, Ill.
Elliott Brothers (London) Ltd., Century Works, Lewisham, London, S. E. 13, England
Ellis and Watts Products, Inc., Monroe at Spencer, Cincinnati 36 (Rossmoyne), Ohio
Elm Laboratories, 10 Washington Ave., Hastings-on-Hudson, N. Y.
Elomag sprl, Avenue Wellington 2, Brussels, Belgium
El-Tronics, Inc., Suburban Station Bldg., Philadelphia, Pa.
Embassy Engineering Corp., 673 Elton Ave., New York 55, N. Y.
Emerson & Cuming Inc., 869 Washington St., Canton, Mass.
Emerson Plastics Corp., 1383 Seabury Ave., Bronx 61, N. Y.
Engelhard Industries, Inc., 113 Astor St., Newark 2, N. J.
Engineered Electronics Co., 506 E. First St., Santa Ana, Calif.
Engis Equipment Co., 431 S. Dearborn St., Chicago, Ill.
English Numbering Machines, Ltd., Queensway, Ponders End, Enfield, Middlesex, England
English Electric Export & Trading Co., Ltd., 23/25 Beaver St., New York 4, N. Y.
Environmental Equipment Corp., 369 Linden St., Brooklyn 27, N. Y.
Epic, Inc., 154 Nassau St., New York 38, N. Y.
Epsco, Inc., 588 Commonwealth Ave., Boston 15, Mass
Ercona Corp., Scientific Instrument Div., 16 W. 46th St., New York 36, N. Y.
Erdco Engineering Corp., Addison, Ill.
Ericssons Telephones, Ltd., Instrument Div., High Church St., New Basford, Nottingham, England
Erie Resistor Corp., 639 W. 12th St., Erie, Pa.
Ertel Engineering Corp., Kingston 31, N. Y.
Esterline-Angus Co., Inc., P. O. Box 596, Indianapolis 6, Ind.
Evans Pipe Co., The, 23 Newport Ave., Uhrichsville, Ohio
Evershield Products, Inc., 53 W. Jackson Blvd., Chicago 4, Ill.
Exact Weight Scale Co., 538 E. Town St., Columbus 15, Ohio

F

Fairbanks Co., The, 393 Lafayette St., New York 3, N. Y.
Fairchild Camera & Instrument Corp., Industrial Camera Div., 5 Aerial Way, Syosset, N. Y.
Fairchild Camera & Instrument Corp., Defense Products Div., Robbins Lane, Syosset, N. Y.
Fairchild Controls Corp., Components Div., 225 Park Ave., Hicksville, N. Y.
Fairchild Semiconductor Corp., 844 Charleston Rd., Palo Alto, Calif.
Falk & Co., Ltd., M., Emefco House, Bell St., Reigate (Surrey), England
Falls Industries, Inc., 31945 Aurora Rd., Solon, Ohio
Falstrom Company, 7 Falstrom Court, Passaic, N. J.
Fansteel Metallurgical Corp., North Chicago, Ill.
Farmer Electric Products Co., Inc., 2300 Washington St., Newton Lower Falls, Mass.
Farrel-Birmingham Co., Inc., Ansonia, Conn.
Farris Engineering Co., 400 Commercial Ave., Palisades Park, N. J.
Fasco Industries, Inc., Rochester 2, N. Y.
Federated Metals Div., American Smelting & Refining Co., 120 Broadway, New York 5, N. Y.
Felt Products Mfg. Co., 7450 N. McCormick Blvd., Skokie, Ill.
Fenn Manufacturing Co., The, 200 Fenn Rd., Newington, Conn.
Fenwal Inc., Pleasant St., Ashland, Mass.
Ferguson Co., H. K., 11th at Walnut, Cleveland 14, Ohio
Ferranti Electric, Inc., 30 Rockefeller Plaza, New York 20, N. Y.
Ficklen, 3rd, Joseph B., 1848 E. Mountain St., Pasadena 7, Calif.
Fielden Electronics Ltd., Paston Rd., Whytenshawe, Manchester, England
Filo Color & Chemical Co., 347 Madison Ave., New York 17, N. Y.
Fine Chemical Co., Inc., 250 W. 57th St., New York 19, N. Y.
Finnell System Inc., 500 East St., Elkhart, Ind.
Firth Sterling, Inc., 3113 Fobes St., Pittsburgh 30, Pa.
Fischer & Porter Co., 50 Warminster Rd., Hatboro, Pa.
Fish-Schurman Corp., 75 Portman Rd., New Rochelle, N. Y.
Fisher Governor Co., Marshalltown, Iowa
Fisher Research Laboratory, Inc., Box 640, Palo Alto, Calif.
Fisher Scientific Co., 709 Forbes St., Pittsburgh 19, Pa.
Flanders Filters, Inc., Riverhead, N. Y.
Fleischman, Burd & Co., Inc., 22 W. 48th St., New York 36, N. Y.
Fleming Radio (Developments), Ltd., Stevenage, Herts, England, U. K.
Flexaust Co., 100 Park Ave., New York 17, N. Y.
Flexonics Corp., 1315 S. Third Ave., Maywood, Ill.
Floquil Products, Inc., Cobleskill, N. Y.
Flori Pipe Co., 5700 Bulwer Ave., St. Louis, Mo.
Flow-Actuated Control Co., Inc., 17-19 Park Row, New York 38, N. Y.
Flowline Corp., New Castle, Pa.
Fluke Mfg. Co., Inc., John, 1111 W. Nickerson St., Seattle 99, Wash.
Fluor Corp., Ltd., 2500 S. Atlantic Blvd., Los Angeles 22, Calif.
Fluor Corp., Ltd., Research Div., 12000 E. Washington Blvd., Whittier, Calif.
Fluor Products Co., 12000 E. Washington Blvd., Whittier, Calif
Foote Mineral Co., 18 W. Chelten Ave,. Philadelphia 44, Pa.
Ford Instrument Co., Div. of Sperry-Rand Corp., 31-10 Thomson Ave., Long Island City 1, N. Y.
Forro Scientific Co., The, 833 Lincoln St., Evanston, Ill.
Foster Engineering Co., 835 Lehigh Ave., Union, N. J.
Foster Wheeler Corp., Nuclear Power Project, 666 Fifth Ave., New York 19, N. Y.
Foxboro Co., 38 Neponset Ave., Foxboro, Mass.
Franklin Electronics, Inc., E. Fourth St., Bridgeport, Pa.
Freed Transformer Co., Inc., 1736 Weirfield St., Brooklyn 27, N. Y.
Frenchtown Porcelain Co., Frenchtown, N. J.
Friez Instrument Div., Bendix Aviation Corp., Fisher Bldg., Detroit 2, Mich.
Furzehill Laboratories Ltd., 57 Clarendon Rd., Watford, Herts, England

G

G-M Laboratories, Inc., 4336 N. Knox Ave., Chicago 41, Ill.
Gaertner Scientific Corp., 1237 Wrightwood Ave., Chicago, Ill.
Gallenkamp & Co., Ltd., A., Sun St., London, E. C. 2, England
Gamma Industrie, 52, Rue de Dunkerque, Paris, France
Garde Mfg. Co., 588 Eddy St., Providence 3, R. I.
Garlock Packing Co., The, Palmyra, N. Y.
Gast Mfg. Corp., P. O. Box 117-N, Benton Harbor, Mich.
Gates & Co., Inc., George W., Hempstead Turnpike & Lucille Ave., Franklin Square, N. Y.
Geigy Industrial Chemicals, Saw Mill River Rd., Ardsley, N. Y.
Geisler Laboratories, P. O. Box 292, Menlo Park, Calif.
Gelman Instrument Co., Chelsea, Mich.
Gems Co., P. O. Box 222, Newington, Conn.
General Alloys Co., 400 W. First St., Boston 27, Mass.
General American Transportation Corp., 135 S. La Salle, Chicago, Ill.
General Atomic Div. of General Dynamics Corp., P. O. Box 608, San Diego 12, Calif.
General Automatic Corp., 12 Carlton Ave., Mountain View, N. J.
General Biochemicals Inc., Laboratory Park, Chagrin Falls, Ohio
General Cable Corp., 420 Lexington Ave., New York 17, N. Y.
General Cement Mfg. Co., Div. of Textron Inc., 400 S. Wyman St., Rockford, Ill.
General Ceramics Corp., 250 Crows Mill Rd., Keasbey, N. J.
General Control Company, 1200 Soldiers Field Rd., Boston 34, Mass.
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
General Electric Co., Nela Park, Cleveland 12, Ohio
General Electric Co., Apparatus Sales Div., 1 River Rd., Schenectady 5, N. Y.
General Electric Co., Atomic Power Equipment Dept., San Jose, Calif.
General Electric Co., Computer Div., 1103 N. Central Ave., Phoenix, Ariz.
General Electric Co., Construction Materials Div., 1285 Boston Ave., Bridgeport 2, Conn.
General Electric Co., Electronic Components Div., Owensboro, Ky.
General Electric Co., Laminated Products Dept., Coshocton, Ohio
General Electric Co., Lamp Wire & Phosphors Dept., 21800 Tungsten Rd., Cleveland 17, Ohio
General Electric Co., Medium AC Motor & Generator Dept., 1 River Rd., Schenectady 5, N. Y.
General Electric Co., Metallurgical Products Dept., 11139 E. Eight Mile Blvd., Detroit 32, Mich.
General Electric Co., Semiconductor Products Dept., Electronics Park, Syracuse, N. Y.
General Electric Co., Silicone Products Dept., Waterford, N. Y.
General Electric Co. Ltd. of England, Magnet House, Kingsway, London, W. C. 2
General Lead Construction Corp., 1800 Harrison Ave., Kearny, N. J.
General Magnetics, Inc., 135 Bloomfield Ave., Bloomfield, N. J.
General Metals, Inc., 358 Goldboro St., P. O. Box 448, Greensboro, N. C.
General Mills, Inc., Chemical Div., So. Kensington Rd., Kankakee, Ill.
General Mills, Inc., Mechanical Div., Nuclear Equipment Dept., 1620 Central Ave. N. E., Minneapolis, Minn.
General Nuclear Co., 4957 Hollywood Blvd., Hollywood 27, Calif.
General Nuclear Corp., 550 Fifth Ave., New York 26, N. Y.
General Nuclear Engineering Corp., P. O. Box 245, Dunedin, Fla.
General Photo Products Co., Inc., 15 Summit Ave., Chatham, N. J.
General Precision Laboratory, Inc., 63 Bedford Rd., Pleasantville, N. Y.
General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.
General Radiological, Ltd., 15-18 Clipstone St., London W. 1, England
General Radionuclear Co., P. O. Box 407, Milford, Conn.
General Regulator Corp., 666 Fifth Ave., New York 19, N. Y.
General Scientific Equipment Co., 7516 Limekiln Pike, Philadelphia 50, Pa.
General Transistor Corp., 91-27 138th Place, Jamaica 35, N. Y.
General Ultrasonics Co., 67 Mulberry St., Hartford 3, Conn.
Genisco, Inc., 2233 Federal Ave., Los Angeles 64, Calif.
Georator Corp., Manassas, Va.
Giannini & Co., Inc., G. M., 918 E. Green St., Pasadena, Calif.
Gibbs Mfg. Co., N. Main St., Janesville, Wis.
Girdler Construction Div., Chemetron Corp., P. O. Box 174, Louisville 1, Ky.
Gladding, McBean & Co., 2901 Los Feliz Blvd., Los Angeles 39, Calif.
Glas-Col Apparatus Co., 711 Hulman St., Terre Haute, Ind.
Glaser Lead Co., Inc., 31 Wyckoff Ave., Brooklyn 27, N. Y.
Glass Engineering Laboratories, 601 O'Neil Ave., Belmont, Calif.
Glidden Co., 900 Union Commerce Bldg., Cleveland 14, Ohio
Good-All Electric Mfg. Co., Good-All Bldg., Ogallala, Neb.
Goodrich Chemical Co., B. F., 3135 Euclid Ave., Cleveland 15, Ohio
Goodyear Tire & Rubber Co., Akron, Ohio
Gordon Co., Claud S., 619 W. 30th St., Chicago 16, Ill.
Goslin Electric & Mfg. Co., 2921 W. Olive St., Burbank, Calif.
Gow-Mac Instrument Co., 100 Kings Rd., Madison, N. J.
Gows Chemical Co., Inc., The, P. O. Box 443, Laramie, Wyo.
Graflex, Inc., 3900 Monroe Ave., Rochester, N. Y.
Grand Transformers, Inc., Marian & Beech Tree Sts., Grand Haven, Mich.
Graver Tank & Mfg. Co., Inc., 4809 Tod Ave., East Chicago, Ind.
Graver Water Conditioner Co., 216 W. 14th St., New York 11, N. Y.
Great Lakes Carbon Corp., 18 E. 48th St., New York, N. Y.
Great Lakes Electric Mfg. Co., 17 S. Desplaines St., Chicago 6, Ill.
Greene & Co., Inc., Arnold, 122 Hampshire St., Cambridge, Mass.
Greer Hydraulics, Inc., International Airport, Jamaica 30, N. Y.
Greibach Instruments Corp., 315 North Ave., New Rochelle, N. Y.
Grieve-Hendry Co., Inc., 1401-17 W. Carroll Ave., Chicago 7, Ill.
Grinnell Co., 260 W. Exchange St., Providence 1, R. I.
Griscom-Russell Co., Sub. of General Precision Equipment Corp., Massillon, Ohio
Grove Valve & Regulator Co., 6529 Hollis St., Oakland 8, Calif.
Guardian Electric Co., 1625 W. Walnut St., Chicago 12, Ill.
Gudeman Co., 340 W. Huron St., Chicago 10, Ill.
Gulton Industries, Durham Ave., Metuchen, N. J.
Gyra Electronics Corp., 518 N. Spring St., La Grange Park, Ill.

H

H-B Instrument Co., American & Bristol Sts., Philadelphia 40, Pa.

NUCLEAR AND ALLIED PRODUCTS

Hacker & Co., Inc., William J., 82 Beaver St., New York 5, N. Y.
Hagan Chemicals & Controls, Inc., Hagan Bldg., Box 1346, Pittsburgh 30, Pa.
Haledy Electronics Co., 57 William St., New York 5, N. Y.
Hallamore Electronics Co., 8352 Brookhurst, Anaheim, Calif.
Hallett Mfg. Co., 5910 Bowcraft St., Los Angeles 16, Calif.
Hamer Valves, Inc., 2919 Gardenia Ave., P. O. Box 1951, Long Beach 6, Calif.
Hamilton-Kent Mfg. Co., Kent, Ohio
Hamilton Mfg. Co., Two Rivers, Wis.
Hammel-Dahl Co., Warwick Industrial Park, Providence 5, R. I.
Hamner Electronics Co., Box 531, Princeton, N. J.
Handy & Harman, 82 Fulton St., New York 38, N. Y.
Hanna Engineering Works, 1767 N. Elston Ave., Chicago 22, Ill.
Hanson-Gorrill-Brian, Inc., 82 Hazel St., Glen Cove, N. Y.
Harbison-Walker Refractories Co., Farmers Bank Bldg., Pittsburgh 22, Pa.
Hardwick, Hindle, Inc., 40 Hermon St., Newark 5, N. J.
Harper Electric Furnace Corp., 57 River St., Buffalo 2, N. Y.
Harriss (Engineers), Granta Terrace, Stapleford, Cambridge, England
Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6, Ohio
Harty Co., Inc., R. V., 1433 Sloman Ave., Detroit 11, Mich.
Harvey Aluminum, 19200 S. Western Ave., Torrance, Calif.
Hastings-Raydist, Inc., Newcomb Ave., Hampton, Va.
Hathaway Instrument Div., Hamilton Watch Co., 5800 E. Jewell, Denver, Colo.
Haveg Industries, Inc., Halocarbon Div., 950 Greenbank Rd., Wilmington 8, Del.
Haws Drinking Faucet Co., 1439 Fourth St., Berkeley 10, Calif.
Haydon Co., A. W., The, 232 N. Elm St., Waterbury, Conn.
Haynes Stellite Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York, N. Y.
Hays Corp., Michigan City 40, Ind.
Hays Mfg. Co., 814 W. 12th St., Erie, Pa.
Hayward Scientific Glass Corp., 217 N. Magnolia Ave., Whittier, Calif.
Health Physics Services, Inc., 1111 Low St., Baltimore 2, Md.
Heath Company, Benton Harbor, Mich.
Heatron, Inc., 333 Eberts Lane, York, Pa.
Heavy Minerals Co., 4000 N. Hawthorne St., Chattanooga, Tenn.
Heiland Div. of Minneapolis-Honeywell Regulator Co. 5200 E. Evans Ave., Denver 22, Colo.
Heise-Bourdon Tube Co., Inc. 1 Brook Rd., Newtown, Conn.
Helicoid Gage Div., American Chain & Cable Co., Inc., 929 Connecticut Ave., Bridgeport 2, Conn.
Helipot Div. of Beckman Instruments, Fullerton, Calif.
Heppenstall Co., 4622 Hatfield St., Pittsburgh 1, Pa.
Heraeus GmbH, W. C., 12-14 Heraeusstr., Hanau, Germany
Hermaseal Co., Inc., 1101 Lafayette St., Elkhart, Ind.
Hermes Sonic, Inc., 13-19 University Place, New York 3, N. Y.
Hetherington, Inc., 1420 Delmar Drive, Folcroft, Pa.
Hett Associates, Inc., 603 Grand Ave., Englewood, N. J.
Hevi-Duty Electric Co., 2040 W. Wisconsin Ave., Milwaukee 1, Wis.
Hewlett-Packard Co., 275 Page Hill Rd., Palo Alto, Calif.
Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland 8, Ohio
Hi-G, Inc., Bradley Field, Windsor Locks, Conn.
High Vacuum Equipment Corp., 2 Churchill Rd., Hingham, Mass.
High Voltage Engineering Corp., S. Bedford St., Burlington, Mass.
Highside Chemicals, Inc., 4-10 Colfax Ave., Clifton, N. J.
Hild Floor Machine Co., 1217 W. Washington Blvd., Chicago, Ill.
Hilger & Watts, Ltd., 98 St., Pancras Way, London, N. W. 1, England
Hill Co., C. R., 35 W. Grand River, Detroit 26, Mich.
Hill & Co., E. Vernon, P. O. Box 189, Lake Geneva, Wis.
Hills McCanna Co., 4605 W. Touhy Ave., Chicago 46, Ill.
Hirschman-Pohle Co., Inc., 115 Lent Ave., Le Roy, N. Y.
Hitemp Wires Inc., 26 Windsor Ave., Mineola, N. Y.
Hofman Laboratories, Inc., Evans Terminal, Hillside, N. J.
Hogan Laboratories, Inc., 155 Perry St., New York 14, N. Y.
Hoke, Inc., Cresskill, N. J.
Holmes & Narver, Inc., 828 S. Figueroa St., Los Angeles 17, Calif.
Hommel Co., O., 209 Fourth Ave., Pittsburgh, Pa.
Hooker Chemical Corp., 13 Iroquois St., Niagara Falls, N. Y.
Hoosier Tarpaulin & Canvas Goods Co., 1302 W. Washington Ave., Indianapolis 6, Ind.
Horizons Inc., 2905 E. 79th St., Cleveland 4, Ohio
Houghton Laboratories, Inc., Houghton Ave., Olean, N. Y.
Howard Industries, Inc., Divisions: Cyclohm Motor Corp., Electric Motor Corp., Racine, Wis.
Huggins Laboratories, Inc., 999 E. Arques Rd., Sunnyvale, Calif.
Hughes Products, Airport Station, Los Angeles 45, Calif.
Hull Associates, 30 W. Monroe St., Chicago 13, Ill.
Hunter-Bristol Div., Thiokol Chemical Corp., Bristol, Pa.
Huppert Co., K. H., 6830 S. Cottage Grove Ave., Chicago 37, Ill.
Huron Industries, P. O. Box 104, Port Huron, Mich.
Hycon-Eastern, Inc., 75 Cambridge Parkway, Cambridge 42, Mass.
Hycon Electronics Inc., P. O. Bin D, Pasadena, Calif.
Hycor Div. of International Resistance Co., 12970 Bradley Ave., Sylmar, Calif.
Hydel, Inc., 99 First St., Cambridge 41, Mass.

I

ITT Components Div., International Telephone & Telegraph Corp., P. O. Box 412, Clifton, N. J.
Identification Service Corp., 144 W. 46th St., New York, N. Y.
Ilg Electric Ventilating Co., 2850 N. Pulaski Rd., Chicago 41, Ill.
Illinois Testing Labs., 420 N. LaSalle St., Chicago, Ill.
Illinois Water Treatment Co., 840 Cedar St., Rockford, Ill.
Imhof Ltd., Alfred, 112-116 New Oxford St., London, W. C. 1, England
Imperial Brass Mfg. Co., 6300 W. Harrison St., Chicago 7, Ill.
Indiana Steel Products Co., The, Valparaiso, Ind.
Indium Corp. of America, 1676 Lincoln Ave., Utica 4, N. Y.
Industrial Condenser Corp., 3243 N. California Ave., Chicago 18, Ill.
Industrial Development Labs., Inc., 982 River Rd., Edgewater, N. J.
Industrial Devices, Inc., 982 River Rd., Edgewater, N. J.
Industrial Engineering Corp., 525 E. Woodbine, Louisville, Ky.
Industrial Engineering & Equipment Co., 24 Hanley Industrial Court, St. Louis (Brentwood) 17, Mo.
Industrial Forge & Steel, Inc., 1501 Allen Ave., S. E., Canton, Ohio
Industrial Hygiene Associates, 295 Upland Ave., Newton Highlands 61, Mass.
Industrial Instrument Div., Mandrel Industries, Inc., 5134 Glenmont, Houston, Texas
Industrial Instruments, Inc., 99 Commerce Rd., Cedar Grove, N. J.
Industrial Nuclear Radiation Consultants, Box 647, New Haven 3, Conn.
Industrial Nucleonics Corp., 1205 Chesapeake Ave., Columbus 12, Ohio
Industrial Over-All Laundry, 1604 Thomaston Ave., Waterbury 14, Conn.
Industrial Plastic Fabricators, Endicott St., Norwood, Mass.
Industrial Test Equipment Co., 55 E. 11th St., New York 3, N. Y.
Industrial Timer Corp., 1407 McCarter Highway, Newark 4, N. J.
Industrial Transformer Corp., Gouldsboro, Pa.
Industrial Tubes, Inc., 321 Stevens St., Geneva, Ill.
Industrial X-Ray & Research, Inc., 880 Second St., Muskegon, Mich.
Industro Transistor Corp., 35-10 36th Ave., Long Island City 6, N. Y.
Inertol Co., Inc., 484-7 Frelinghuysen Ave., Newark 12, N. J.
Infico, Inc., P. O. Box 5033, Tucson, Ariz.
Ingersoll-Rand Co., Phillipsburg, N. J.
Instrument Development Lab., Inc., 67 Mechanic St., Attlesboro, Mass.
Instrument Resistors Co., 1036 Commerce Ave., Union, N. J.
Instrumentation Associates, 17 W. 60th St., New York 23, N. Y.
Instruments, Inc., 122 N. Madison, P. O. Box 556, Tulsa, Okla.
Instruments for Industries, Inc., 150 Glen Cove Rd., Mineola, N. Y.
Intercontinental Dynamics Corp., 170 Colllidge Ave., Englewood, N. J.
Interelectronics Corp., 2432 Grand Concourse, New York 58, N. Y.
International Equipment Co., 1284 Soldiers Field Rd., Boston 35, Mass.
International Instruments, Inc., P. O. Box 2954, New Haven 15, Conn.
International Nickel Co., Inc., 67 Wall St., New York 5, N. Y.
International Pump & Machine Works, 81 Dorsa Ave., Livingston, N. J.
International Rectifier Corp., 1521 E. Grand Ave., El Segundo, Calif.
International Register Co., 2620 W. Washington Blvd., Chicago 12, Ill
International Resistance Co., 401 N. Broad St., Philadelphia 8, Pa.
International Telephone & Telegraph Corp., Industrial Products Div., 250 Garibaldi Ave., Lodi, N. J.
Internuclear Co., 7 N. Brentwood Blvd., Clayton 5, Mo.
Interstate Industrial Uniform Rental Service, Decontamination Laundry Div., 295 Parker St., Indian Orchard, Mass.
Intrusion-Prepakt, 568 Union Commerce Bldg., Cleveland 14, Ohio
Ionics, Inc., 152 6th St., Cambridge 42, Mass.
Iron Fireman Mfg. Co., Electronics Div., 2838 Southeast Ninth Ave., Portland 2, Ore.
Isolantite Mfg. Corp., Stirling, N. J.
Isomet Corp., 118 Union St., Palisades Park, N. J.
Isotope Accessories Co., The, 5312 Westminster Ave., Philadelphia 31, Pa.
Isotope Developments Ltd., Beenham Grange, Aldermaston Wharf, nr. Reading, Berks, England
Isotope Products Div., Canadian Curtiss-Wright, Ltd., Davis Rd., Oakville, Ontario, Canada
Isotopes, Inc., 123 Woodland Ave., Westwood, N. J.
Isotopes Specialties Co., 170 W. Providencia, Burbank, Calif.
Itek Corp., 1605 Trapelo Rd., Waltham 54, Mass.

J

J-B-T Instruments, Inc., 133 Hamilton St., New Haven 8, Conn.
Jackes-Evans Mfg. Co., 4427 Geraldine, St. Louis 15, Mo.
Jackson Electrical Instrument Co., 16 S. Patterson Blvd., Dayton 1, Ohio
James, Pond & Clark, Inc., 2181 E. Foothill Rd., Pasadena, Calif.
Jamesbury Corp., 45 New St., Worcester 3, Mass.
Jarrell-Ash Co., 26 Farwell St., Newtonville 60, Mass.
Jeffers Electronics Div., Speer Carbon Co., DuBois, Pa.
Jelliff Mfg. Corp., C. O., 200 Pequot Ave., Southport, Conn.
Jem Penetrameter Mfg. Co., 122 Hampshire St., Cambridge 39, Mass.
Jennings Radio Mfg. Corp., 970 McLaughlin Ave., P. O. Box 1278, San Jose 12, Calif.
Jerguson Gage & Valve Co., Adams St., Burlington, Mass.
Johns-Manville, 22 E. 40th St., New York 16 ,N. Y.
Johnson & Associates, Inc., William B., P. O. Box 415, Mountain Lakes, N. J.
Johnson Co., E. F., Waseca, Minn.
Johnson Corp., 809 Wood St., Three Rivers, Mich.
Johnson-Williams, Inc., 2625 Park Blvd., Palo Alto 35, Calif.
Johnston & Funk Metallurgical Corp., W. Kemrow Ave., Wooster, Ohio
Johnston Laboratories, Inc., William H., Lafayette, Ind.
Jordan Corp., Div. of OPW Corp., 6013 Wiehe Rd., Cincinnati 13, Ohio
Jordan Electronics A Div. of The Victoreen Instrument Co., 3025 W. Mission Rd., Alhambra, Calif.
Joy Mfg. Co., Oliver Bldg., Pittsburgh 22, Pa.

K

K-F Development Co., 2606 Spring St., Redwood City, Calif.
K-V Transformer Corp., 20 E. Franklin St., Danbury, Conn.
Kahl Scientific Instrument Corp., P. O. Box 1166, El Cajon, Calif.
Kahlenberg Bros. Co., 12th & Monroe Sts., Two Rivers, Wis.
Kahn & Co., Inc., 541 Windsor St., Hartford 1, Conn.
Kaiser Aluminum & Chemical Sales, Inc., 919 N. Michigan Ave., Chicago 11, Ill.
Kaiser Engineers Div. of Henry J. Kaiser Co., Oakland 12, Calif
Kaman Aircraft Corp., 2013 Ridgecrest Drive, S. E., Albuquerque, N. M.
Kawecki Chemical Co., Inc., 220 E. 42nd St., New York, N. Y.
Kay Electric Co., 14 Maple Ave., Pine Brook, N. J.
Kay & MacDonald, Inc., 11-15 Central Ave., West Orange, N. J.
Kearfott Co., Inc., Engineering & Sales Div., 1378 Main Ave., Clifton, N. J.
Kearney Industries, Delanium Graphite Div., 134 Elmora Ave., Elizabeth, N. J.
Kearney & Trecker Corp., 6800 W. National Ave., Milwaukee 14, Wis.
Keckley Co., O. C., 3400 Cleveland St., Skokie, Ill.
Keithley Instruments, Inc., 12415 Euclid Ave., Cleveland 6, Ohio
Keller Products, Inc., 41 Union St., Manchester, N. H.
Kelley Co., O. G., 98 Taylor St., Dorchester, Mass.
Kellogg Switchboard & Supply Co., IT&T Div., 6650 S. Cicero Ave., Chicago 38, Ill.
Kendall Co., The, Polyken Sales Div., 309 W. Jackson Blvd., Chicago 6, Ill.
Kennametal, Inc., Latrobe, Pa.
Kepco Laboratories, Inc., 131-38 Sanford Ave., Flushing 55, N. Y.
Kessler Chemical Co., Inc., State Rd. & Cottman Ave., Philadelphia 15, Pa.
Ketay Dept., Norden Div. of United Aircraft Corp., Jericho Turnpike, Commack, N. Y.
Kewaunee Mfg. Co., 5083 S. Center St., Adrian, Mich.
Keystone Carbon Co., Resistor Div., St. Marys 34, Pa.
Keystone Compresser Co., 8417 Hagerman St., Philadelphia 36, Pa.
Keystone Products Co., 904-6 23rd St., Union City, N. J.
Kieley & Mueller Co., Inc., 64 Genung St., Middletown, N. Y.
Kinetics Corp., 2 Churchill Rd., Hingham, Mass.
King Electric Equipment Co., 9123 Inman Ave., Cleveland 5, Ohio

King Laboratories, Inc., 127 Solar St., Syracuse 3, N. Y.
King Machine Tool Div., American Steel Foundries, 1150 Tennessee Ave., Cincinnati 29, Ohio
Kinney Mfg. Div., The New York Air Brake Co., 3529 Washington St., Boston 30, Mass.
Kin Tel, 5725 Kearny Villa Rd., San Diego 11, Calif.
Kip Electronics Corp., 29 Holly Place, Box 562, Stamford, Conn.
Kirchberger & Co., Inc., M., 82-92 W. Forest Ave., Englewood, N. J.
Knapp Mills Inc., 23-15 Borden Ave., Long Island City 1, N. Y.
Knopp, Inc., 1307 66th St., Emeryville 8, Calif.
Kollmorgen Optical Corp., 347 King St., Northampton, Mass.
Kontes Glass Co., Dept. P-159, Vineland, N. J.
Koontz-Wagner Electric Co., N. Michigan & Merlon, South Bend, Ind.
Kovea Fabricators, Inc., 90 E. Dickerson St., Dover, N. J.
Kraftile Co., Niles, Calif.
Krohn-Hite Corp., 580 Massachusetts Ave., Cambridge 39, Mass.
Kruger Instruments, Harold, P. O. Box 164, San Gabriel, Calif.
Kulijian Corp., 1200 N. Broad St., Philadelphia 21, Pa.
Kulka Electronic, Inc., 633 S. Fulton Ave., Mt. Vernon, N. Y.
Kunkle Valve Co., 119 S. Clinton St., Fort Wayne, Ind.
Kupfrian Mfg. Corp., 350 State St., Binghamton, N. Y.

L

L & B Welding Equipment, Inc., 2424 6th St., Berkeley, Calif.
L. O. F. Glass Fibers Co., 1810 Madison Ave., Toledo 1, Ohio
L & S Machine Co., Inc., P. O. Box 317, R. D. 2, Latrobe, Pa.
Labgear Ltd., Nucleonics Div., Willow Place, Cambridge, England
Laboratory Equipment Corp., St. Joseph, Mich.
Laboratory for Electronics, Inc., 75 Pitts St., Boston 14, Mass.
Ladish Co., 5458 S. Packard Ave., Cudahy, Wis.
Lambda Electronics Corp., 11-11 131st St., College Point 56, N. Y.
Lamotte Chemical Products Co., Chestertown, Md.
Lamson Corp., Syracuse 1, N. Y
Land Air, Inc., 2133 Adams Ave., San Leandro, Calif.
Landauer, Jr., & Co., R. S., 3920 216th St., Matteson, Ill.
Landis & Gyr, Inc., 45 W. 45th St., New York 36, N. Y.
Landswerk Electrometer Co., 641 Sonora Ave., Glendale 1, Calif.
LaPine & Co., Arthur S., 6001 S. Knox Ave., Chicago 29, Ill.
Lapp Insulator Co., Inc., 40 Gilbert St., LeRoy, N. Y.
Laurence Co., Inc., R. G., 134 Summit St., Tenafly, N. J.
LaVezzi Machine Works, 4635 W. Lake St., Chicago 44, Ill.
Lavoie Laboratories Inc., Matawan-Freehold Rd., Morganville, N. J.
Lawrence Pumps, Inc., 371 Market St., Lawrence, Mass.
Leach Corp., 18435 Susana Rd., Compton, Calif.
Lead Products, Inc., Hartford Rd., Manchester, Conn.
Leader Iron Works, Inc., 2150 N. Jasper, Decatur, Ill.
Leavitt Machine Co., The, 10 E. River St., Orange, Mass.
Lebanon Steel Foundry, Lebanon, Pa.
Ledoux & Co., 359 Alfred Ave., Teaneck, N. J.
Lee Electric & Mfg. Co., 2806 Clearwater St., Los Angeles 39, Calif.
Leeds & Northrup Co., 4970 Stenton Ave., Philadelphia 44, Pa.
Leighton Labs., H. W., York Rd. & Sunset Lane, Hatboro, Pa.
Leitz, Inc., E., 468 Fourth Ave., New York, N. Y.
Lel, Inc., 308 Oak St., Copiague, N. Y.
Leland Electric Co., Div. of American Machine & Foundry Co., 1501 Webster St., Dayton 1, Ohio
Leland, Inc., G. H., 123 Webster, Dayton 2, Ohio
Leland Instruments, Ltd., 22-23 Millbank, Westminster, S. W. 1, London, England
Lennard Co., Inc., P. M., 1061 E. 8th St., Jacksonville 6, Fla.
Lenkurt Electric Co., 1105 County Rd., San Carlos, Calif.
Lerma Engineering Corp., P. O. Box 168, Northampton, Mass.
Leslie Co., 229 Grant Ave., Lyndhurst, N. J.
Levinthal Electronic Products, Inc., Stanford Industrial Park, Palo Alto, Calif.
Lewis Engineering Co., 52 Rubber Ave., Naugatuck, Conn.
Librascope, Inc., 808 Western Ave., Glendale, Calif.
Liebel-Flarsheim Co., 111 E. Amity Rd., Cincinnati 15, Ohio
Lindberg Engineering Co., 2450 W. Hubbard St., Chicago 12, Ill.
Linde Co., Div. of Union Carbide Corp., 420 Lexington Ave., New York 17, N. Y.
Lindsay Chemical Co., 272 Ann St., West Chicago, Ill.
Link Aviation, Inc., Binghamton, N. Y.
Liquid Carbonic Div. of General Dynamics Corp., 3100 S. Kedzie Ave., Chicago 23, Ill.
Liquid Metals, Inc., Box 266, Westford, Mass.
Lithcote Corp., 5000 Lake St., Melrose Park, Ill.
Lithium Corp. of America, Inc., 2500 Rand Tower Bldg., Minneapolis 2, Minn.
Littelfuse, Inc., DesPlaines, Ill.
Little, Inc., Arthur D., 30 Memorial Drive, Cambridge 42, Mass.
Litton Engineering Laboratories, P. O. Box 949, Grass Valley, Calif.
Litton Industries, 336 N. Foothill Rd., Beverly Hills, Calif.
Loma Machine Mfg. Co., Inc., 114 E. 32nd St., New York, N. Y.
Lord Mfg. Co., 1635 W. 12th St., Erie, Pa.
Louthan Mfg. Co., East Liverpool, Ohio
Lunkenheimer Co., The, Beekman St. & Waverly Ave., Cincinnati 14, Ohio
Lukens Steel Co., 266 Lukens Bldg., Coatesville, Pa.
Luzerne Rubber Co., Muirhead Ave., Trenton, N. J.
Lyndon Aircraft, 140 Clifford St., Newark, N. J.
Lyndon Bros., Inc., 85 Zabriskie St., Hackensack, N. J.

M

McCormick Selph Associates, Hollister Airport, Hollister, Calif.
McCullough Tool Co., 5820 S. Alameda St., Los Angeles 58, Calif.
McIntosh Equipment Corp., 17-19 Park Row, New York 38, N. Y.
McKenna Laboratories, 2503 Main St., Santa Monica, Calif.
McMillan Industrial Corp., Brownville Avenue Plant, Ipswich, Mass.
M & C Nuclear, Inc., 40 Forest St., Attleboro, Mass.
M-H Standard Corp., 513-521 Communipaw Ave., Jersey City 4, N. J.
M S A Research Corp., Callery, Pa.
Macbeth Instrument Corp., Little Britain Rd., Newburgh, N. Y.
Mackenzie Walton Corp., 478 Pawtucket Ave., Pawtucket, R. I.
MacLeod & Hanopol, Inc., 10 Roland-St., Charlestown 29, Mass.
Machlett Laboratories, Inc., 1063 Hope St., Springdale, Conn.
Mackay Inc., A. D., 198 Broadway, New York 38, N. Y.
Magnaflux Corp., 7346 W. Lawrence Ave., Chicago 31, Ill.
Magnatran, Inc., P. O. Box 211, Kearny, N. J.
Magnavox Co., The, Fort Wayne, Ind.
Magnetic Amplifiers, Inc., 632 Tinton Ave., New York 55, N. Y.
Magnetic Instruments Co., Inc., 546 Commerce St., Thornwood, N. Y.
Magnetic Research Corp., Stabolt Div., 200-202 Center St., El Segundo, Calif.
Magnetic Seal Corp., Sowams Rd., Barrington, R. I.
Magnetics, Inc., Box 391, Butler, Pa.
Magnetics Research Co., Inc., 255 Grove St., White Plains, N. Y.
Magnetrol, Inc., 2115 S. Marshall Blvd., Chicago 23, Ill.
Malaker Associates, Stephen F., 24 Commerce St., Newark, N. J.
Mallinckrodt Chemical Works, Second & Mallinckrodt Sts. St. Louis 7, Mo.
Mallory & Co., Inc., P. R., 58 S. Gray St., Indianapolis 6, Ind.
Mallory-Sharon Metals Corp., Niles, Ohio
Manco Mfg. Co., Bradley, Ill.
Mann Mfg. Co., Inc., 229 Burlington Rd., Clarendon Hills, Ill.
Manning, Maxwell & Moore, Inc., 250 E. Main St., Stratford, Conn.
Manson Laboratories, Inc., 375 Fairfield Ave., Stamford, Conn.
Manufacturers Engineering & Equipment Corp., York & Mill Rds., Hatboro, Pa.
Marine Electric Corp., 600 Fourth Ave., Brooklyn, N. Y.
Marine & Industrial Products Co., 1150 W. Marquette Blvd., Chicago 21, Ill.
Marion Electrical Instrument Co., Grenier Field, Manchester, N. H.
Markel & Sons, L. Frank, School House Lane, Norristown, Pa.
Markite Corp., 155 Waverly Place, New York 14, N. Y.
Marley Co., 222 W. Gregory Blvd., Kansas City, Mo.
Marman Div., Aeroquip Corp. 11214 Exposition Blvd., Los Angeles 64, Calif.
Marsh McLennan Co., 231 S. LaSalle St., Chicago 4, Ill.
Martin Co., The, Nuclear Div., Mail J340, Baltimore 3, Md.
Martindale Electric Co., Box 617, Edgewater Branch, Cleveland 7, Ohio
Marvel Engineering Co., 7227 N. Hamlin Ave., Chicago 45, Ill.
Marvel-Schebler Products Div. of Borg-Warner Corp., Decatur, Ill.
Mason-Neilan, Nahatan St., Norwood, Mass.
Massiot & Co., G., 37 bis Rue de Belfort, Courbevoie, Seine, France
Master Builders Co., 7016 Euclid Ave., Cleveland, Ohio
Matheson Co., 932 Paterson Plank Rd., East Rutherford, N. J.
Matthew Laboratories, 146 Riverdale Ave., Yonkers 2, N. Y.
Maxim Silencer Co., The, Homestead Ave., Hartford, Conn.
Maxson Instruments, 47-37 Austell Place, Long Island City 1, N. Y.
Maywood Chemical Works, 111 W. Hunter Ave., Maywood, N. J.
Measurement Engineering Ltd., Amprior, Ontario, Canada
Measurements Corp., Boonton, N. J.
Medical Engineering Corp., 11 University Rd., Cambridge 38, Mass.
Meillon Inc., George T., 132 Nassau St., New York 38, N. Y.
Melco Products, Inc., 301 Fifth Ave., South Minneapolis, Minn.
Menasco Mfg. Co., 805 S. San Fernando Blvd., Burbank, Calif.
Menlo Research Laboratory, P. O. Box 522, Menlo Park, Calif.
Mepco Inc., 35-37 Abbett Ave., Morristown, N. J.
Merck & Co., Inc., Chemical Div., 126 E. Lincoln Ave., Rahway, N. J.
Merck & Co., Ltd., Research Chemicals Dept., 560 De Courcelle St., Montreal 9, P. Q., Canada
Mercoid Corp., 4201 Belmont Ave., Chicago 41, Ill.
Meriam Instrument Co., The, 10920 Madison Ave., Cleveland 2, Ohio
Metal Hydrides, Inc., 12-24 Congress St., Beverly Mass.
Metal Textile Corp., 647 E. First Ave., Roselle, N. J.
Metal & Thermit Corp., Rahway, N. J.
Metalab Equipment Co., Div. of Norbute Corp., 212 Duffy Ave., Hicksville, N. Y.
Metallo Chemical Corp., 117 Liberty St., New York 6, N. Y.
Metallo Gasket Co., 13 Bethany St., New Brunswick, N. J.
Metals & Controls Corp., General Plate Div., 40 Forest St., Attleboro, Mass.
Metals & Controls Corp., Spencer Thermostat Div., 40 Forest St., Attleboro, Mass.
Metals Disintegrating Co., Inc., P. O. Box 290, Elizabeth, N. J.
Metals Research & Development, Inc., Tunkhannock Ave., Exeter, Pa.
Meters, Inc., 5353 N. Keystone Ave., Indianapolis 20, Ind.
Methode Mfg. Corp., 7447 W. Wilson Ave., Chicago 31, Ill.
Metronix, Inc., Chesterland 6, Ohio
Mettler Instrument Corp., Hightstown, N. J.
Metz Refining Co., 369 Mulbery St., Newark 2, N. J.
Meyer Co., W. F., Bedford, Ind.
Mica Insulator Div. of Minnesota Mining & Mfg. Co., 797 Broadway, Schenectady 1, N. Y.
Micanite & Insulators Co., Ltd., The, Blackhorse Lane, Walthamstow, London, E. 17, England
Michigan Chemical Corp., Rare Earth & Thorium Div., St. Louis, Mich.
Mico Instrument Co., 82 S. Trowbridge St., Cambridge 38, Mass.
Microchemical Specialty Co., 1834 University Ave., Berkeley 3, Calif.
Micro-Circuits Co., New Buffalo, Mich.
Micro Metallic Corp., 30 Sea Cliff Ave., Glen Cove, N. Y.
Micro Switch Div. of Minneapolis-Honeywell Regulator Co., 7 W. Spring St., Freeport, Ill.
Microwave Associates, Inc., Burlington, Mass.
Mid-Century Instrumatic Corp., 611 Broadway, New York 12, N. Y.
Middle West Service Co., 20 N. Wacker Drive, Chicago, Ill.
Midwest Piping Co, Inc., 1450 S. 2nd St., St. Louis 3, Mo.
Midwestern Instruments, 41st & Sheridan Rd., Tulsa, Okla.
Millen Mfg. Co., James, 150 Exchange St., Malden, Mass.
Miller & Son., Inc., Franklin P., 36 Meadow St., East Orange 36, N. J.
Millipore Filter Corp., Bedford, Mass.
Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.
Miniature Precision Bearings, Inc., Keene, N. H.
Minimax Co., 5905 N. Clark St., Chicago 26, Ill.
Minitran Corp., 5 Oliver St., Newark 2, N. J.
Minneapolis-Honeywell Boston Div., 40 Life St., Boston 35, Mass.
Minneapolis-Honeywell Regulator Co., 10721 Hanna St., Beltsville, Md.
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., S., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Aeronautical Div., 1433 Stinson Blvd., Minneapolis, Minn.
Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Minneapolis-Honeywell Regulator Co., Rubicon Instruments, Ridge Ave. at 35th St., Philadelphia 32, Pa.
Minnesota Mining & Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.
Minnesota Mining & Mfg. Co., Jersey City Chemical Div., 75 Drovers St., Jersey City 3, N. J.
Mitronics, Inc., 1290 Central Ave., Hillside, N. J.
Mixing Equipment Co., Inc., 192 Mt. Read Blvd., P. O. Box 1370, Rochester 3, N. Y.
Model Builders, Inc., 5300 W. 63rd St., Chicago 38, Ill.
Model Rectifier Corp., 1675 Utica Ave., Brooklyn 34, N. Y.
Modern Laboratory Equipment Co., Dept. N, 1809-11 First Ave., New York 28, N. Y.
Modine Mfg. Co., 1603 De Koven Ave., Racine, Wis.

NUCLEAR AND ALLIED PRODUCTS

Moloney Electric Co., 5390 Bircher Blvd., St. Louis 20, Mo.
Monitor Products Co., 815 Fremont Ave., South Pasadena, Calif.
Monsanto Chemical Co., Inorganic Chemical Div., Lindbergh & Olive St., Rd., St. Louis 24, Mo.
Monsanto Chemical Co., Organic Chemical Div., Lindbergh & Olive St., St. Louis, Mo.
Monsanto Chemical Co., Plastics Div., 600 Monsanto Ave., Springfield 2, Mass.
Moore & Co., Samuel, Mantua, Ohio
Moore Corp., John B., Box 3, Nutley 10, N. J.
Moore, Richard L., P. O. Box 24021, Los Angeles 24, Calif.
Moran Flexible Joint Co., Louisville, Ky.
Morganite, Inc., 33-02 48th Ave., Long Island City 1, N. Y.
Morningstar Paisley, Inc., 630 W. 51st St., New York 19, N. Y.
Moseley Co., F. L., 409 N. Fair Oaks Ave., Pasadena, Calif.
Motoresearch Co., 1600 Junction Ave., Racine, Wis.
Motorola, Inc., Semiconductor Products Div., 5005 E. McDowell Rd., Phoenix, Ariz.
Muirhead & Co., Ltd., Beckenham, Kent, England
Mullard Equipment Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
Mullard Ltd., Mullard House, Torrington Pl., London, W. C. 1, England
Murphy & Miller Inc., 624 W. Taylor St., Chicago 7, Ill.
Mycalex Corp. of America, Clifton Blvd., Clifton, N. J.

N

N. J. E. Corp., 345 Carnegie Ave., Kenilworth, N. J.
NRC Equipment Corp., A Sub. of National Research Corp. 88 Charlemont St., Newton Highlands 61, Mass.
NRD Instrument Co., A Div. of Nuclear Corp. of America, 9842 Manchester St., St. Louis 19, Mo.
Narda Microwave Corp., The, 118 Herricks Rd., Mineola, N. Y.
Narda Ultrasonics Corp., Dept. NBG, 625 Main St., Westbury, N. Y.
Nash Engineering Co., 450 Wilson Rd., South Norwalk, Conn.
Nash & Thompson, Ltd., Oakcroft Road, Chessington, Surrey, England
National Aluminate Corp., 6216 W. 66th Place, Chicago 38, Ill.
National Beryllia Corp., 4501 Dell Ave., North Bergen, N. J.
National Carbon Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
National Cash Register Co., The, Main & K Sts., Dayton, Ohio
National Electrical Instrument Co., 92-21 Corona Ave., Elmhurst, N. Y.
National Forge & Ordnance Co., Front St., Irvine, Warren County, Pa.
National Instrument Labs., Inc., 828 Evarts St., N E, Washington, D. C.
National Lead Co., 111 Broadway, New York 6, N. Y.
National Moldite Co., 250 South St., Newark, N. J.
National Radiac, Inc., 479 Washington St., Newark 2, N. J.
National Research Corp., 70 Memorial Drive, Cambridge 42, Mass.
National Union Electric Corp., Electronics Div., Bloomington, Ill.
National Vulcanized Fibre Co., Wilmington 99, Del.
Navigation Computer Corp., 1621 Snyder Ave., Philadelphia 45, Pa.
Negretti & Zambra, Ltd., 122 Regent St., London, W. 1, England
Nelco Metals, Inc., Canaan, Conn.
Nems Clarke Co., Div. of Vitro Corp. of America, 919 Jesup-Blair Drive, Silver Spring, Md.
Neptune Meter Co., 19 W. 50th St., New York 20, N. Y.
Network Industries Inc., P. O. Box 397, Bayonne, N. J.
Neugroschl Associates, Seth, 230 Riverside Drive, New York 25, N. Y.
Neutronic Associates, 93-14 101st Ave., Ozone Park 16, N. Y.
Neutronics Laboratory, Tinley Park, Ill.
Neutronics Research Co., 165 Lake St., Waltham, Mass.
New England Nuclear Corp., 575 Albany St., Boston, Mass.
New England Scientific Instruments Co., 238 Main St., Cambridge 42, Mass.
New England Tank Cleaning Co., 135 First St., Cambridge 41, Mass.
New Jersey Safety Equipment Co., Park Ave. at Garden State Pkwy., East Orange, N. J.
New London Instrument Co., P. O. Box 189, New London, Conn.
New Process Metals, Inc., 45-65 Manufacturers Place, Newark 5, N. J.
New York Shipbuilding Corp., Camden, N. J.
New York Transformer Co., Inc., Third Ave., Alpha, N. J.
Newark Wire Cloth Co., 351 Verona Ave., Newark 4, N. J.
Ney Co., J. M., Drawer 990, Hartford 2, Conn.
Niagara Filters, Div., & Tolhurst Centrifugals Div., American Machine & Metals, Inc., East Moline, Ill.
Nopco Chemical Co., 60 Park Place, Newark 1, N. J.
Nordberg Mfg. Co., 3073 S. Chase Ave., Milwaukee 1, Wis.
Norman Laboratories, Ernst, Williams Bay, Wis.
North Hills Electric Co., Inc., 402 Sagamore Ave., Mineola, N. Y.
Northeast Scientific Corp., 617 Concord Ave., Cambridge 38, Mass.
Norton Co., 1 New Bond St., Worcester 6, Mass.
Norwalk Valve Co., 33 Railroad Ave., South Norwalk, Conn.
Norwood Controls Unit, Detroit Controls Div. of American-Standard, 944 Washington St., Norwood, Mass.
Nothelfer Winding Labs., 5 Albermarle Ave., Trenton 8, N. J.
NucLead, Inc., 110 Pacific St., Cambridge, Mass.
Nuclear Aids Corp., 612 N. Michigan Ave., Chicago, Ill.
Nuclear-Chicago Corp., 229 W. Erie St., Chicago 10, Ill.
Nuclear Consultants, Inc., 9842 Manchester Rd., St. Louis 19, Mo.
Nuclear Corp. of America, Inc., 400 Park Ave., New York 17, N. Y.
Nuclear Corp. of America, Instrument & Research Div., 2 Richwood Pl., Denville, N. J.
Nuclear Development Corp. of America, 5 New St., White Plains, N. Y.
Nuclear Development Laboratory, P. O. Box 7034, Kansas City, Mo.
Nuclear-Electronics Corp., 2925 N. Broad St., Philadelphia 32, Pa.
Nuclear Engineering Co., Inc., 2600 N. Main St., Walnut Creek, Calif.
Nuclear Engineering Ltd., Woolwich Rd., London S. E. 7, England
Nuclear Enterprises, Ltd., 1750 Pembina Highway, Winnipeg, Canada
Nuclear Enterprises (G. B.) Ltd., Sighthill, Edinburgh, Scotland
Nuclear Laundry Service, Inc., P. O. Box 4145, Waterbury 14, Conn.
Nuclear Materials & Equipment Corp., 680 Warren Ave., Apollo, Pa.
Nuclear Measurements Corp., 2460 N. Arlington Ave., Indianapolis 18, Ind.
Nuclear Metals, Inc., Concord, Mass.
Nuclear Power Plant Co., Ltd., The, Booths Hall, Knutsford, Cheshire, England
Nuclear Research Applications Ltd., Emefco House, Bell St., Reigate (Surrey), England
Nuclear Research Corp., Southampton, Pa.
Nuclear Science Associates, 55 Manor Drive, Newark 6, N. J.
Nuclear Science & Engineering Corp., P. O. Box 10901, Pittsburgh 36, Pa.
Nuclear Service Laboratory, P. O. Box 1885, Knoxville 1, Tenn.
Nucleonic Corp. of America, 196 Degraw St., Brooklyn 31, N. Y.
Nucleonic Labs., Inc., 5218 Park Heights Ave., Baltimore 15, Md.
Nuclide Analysis Associates, P. O. Box 752, State College, Pa.
Nurnberg Thermometer Co., Inc., 124 Livingston St., Brooklyn, N. Y.

O

Oakite Products, Inc., 19 Rector St., New York 6, N. Y.
Ohaus Scale Corp., 1050 Commerce Ave., Union, N. J.
Ohio Semiconductors, Inc., Columbus, Ohio
Ohmart Corp., 2296 Bogen St., P. O. Box 67, Sta. B, Cincinnati 22, Ohio
Ohmite Mfg. Co., 3601 Howard St., Skokie, Ill.
Oilgear Co., The, 16th St. & Pierce, Milwaukee 1, Wis.
Okadee Valve Co., 332 S. Michigan Ave., Chicago 4, Ill.
Olin Mathieson Chemical Corp., Nuclear Exel Div., 275 Winchester Ave., New Haven, Conn.
Omaton Div. of Burndy Corp., Norwalk, Conn.
Omega Engineering Co., 70 E. 45th St., New York 17, N. Y.
On Mark Couplings, 4440 York Blvd., Los Angeles 41, Calif.
Opplem Co., Inc., 83 Uhland St., East Rutherford, N. J.
Oregon Electronic Mfg. Co., 2105 S. E. 6th St., Portland 14, Ore.
Oregon Metallurgical Corp., P. O. Box 484, Albany, Ore.
Ortho Filter Corp., 198 Albion Ave., Paterson 2, N. J.
Oster Mfg. Co., John, Avionic Div., 1 Main St., Racine, Wis.

P

PCA Electronics, Inc., 16799 Schoenborn St., Sepulveda, Calif.
Pace Electrical Instruments Co., Inc., 70-31 84th St., Glendale 27, N. Y.
Pacific Coast Engineering Co., Oak & Clement Sts., Alameda, Calif.
Pacific Electric Motor Co., 1009 66th Ave., Oakland 21, Calif.
Pacific Electro-Nuclear Corp., 11818 Teale St., Culver City, Calif.
Pacific Nuclear Co., 5439 Geary Blvd., San Francisco 21, Calif.
Pacific Pumps, Inc., 5715 Bickett St., Box 151, Huntington Park, Calif.
Pacific Semiconductors, Inc., 10451 W. Jefferson Blvd., Culver City, Calif.
Pacific Transducer Corp., 11836 SW Pico Blvd., Los Angeles 64, Calif.
Packard Instrument Co., Inc., P. O. Box 428, La Grange, Ill.
Packed Column Corp., 30 Church St., New York 7, N. Y.
Pall Filtration Co., 30 Sea Cliff Ave., Glen Cove, N. Y.
Panax Equipment, Ltd., Holmethorpe Industrial Estate, Redhill, Surrey, England
Paragon Electric Co., Two Rivers, Wis.
Paraplegics Mfg. Co., Inc., 10068 Franklin Ave., Franklin Park, Ill.
Par-Metal Products Corp., 32-62 49th St., Long Island City 3, N. Y.
Parr Instrument Co., Moline, Ill.
Parsons Co., Ralph M., 617 W. Seventh St., Los Angeles 17, Calif.
Partlow Corp., The, Dept. NBG-58, New Hartford, N. Y.
Patterson Moos Div., Universal Winding Co., 90-28 Van Wyck Expressway, Jamaica 18, N. Y.
Peele Co., The, 47 Stewart Ave., Brooklyn 37, N. Y.
Peerless Instrument Co., Inc., 90-15 Corona Ave., Elmhurst 73, N. Y.
Peerless Pump Div. of Food Machinery & Chemical Co., 301 West Ave., 26, Los Angeles 31, Calif.
Penberthy Instrument Co., Hi-D Division, 4301 6th Ave., Se., Seattle 8, Wash.
Penfield Mfg. Co., Inc., 19 High School Ave., Meriden, Conn.
Penn Fibre & Specialty Co., 2020 E. Westmoreland St., Philadelphia 34, Pa.
Pennsalt Chemicals Corp., 3 Penn Center, Philadelphia 2, Pa.
Perfection Mica Co., Magnetic Shield Div., 1322 N. Elston Ave., Chicago 22, Ill.
Perkin-Elmer Corp., Main Ave., Norwalk, Conn.
Perkin Engineering Corp., 345 Kansas St., El Segundo, Calif.
Permag Corp., 214 Taaffe Place, Brooklyn 5, N. Y.
Permutit Co., 50 W. 44th St., New York 36, N. Y.
Peschel Electronics, Inc. R. F. D. #1, Patterson, N. Y.
Pfaudler Co., The, a Div. of Pfaudler Permutit Inc., 1002 West Ave., Rochester, N. Y.
Pfizer & Co., Inc., Charles, Chemical Sales Div., 630 Flushing Ave., Brooklyn 6, N. Y.
Phaostron Instrument & Electronic Co., 151 Pasadena Ave., South Pasadena, Calif.
Phelps Dodge Copper Products Corp., 300 Park Ave., New York 22, N. Y.
Philadelphia Pump Div. of American Meter Co., 13500 Philmont Ave., Philadelphia 16, Pa.
Philadelphia Quartz Co., 1146X Public Ledger Bldg., Philadelphia 6, Pa.
Philbrick Researches, Inc., George A., 285 Columbus Ave., Boston 16, Mass.
Philco Corp., Lansdale Tube Co., Lansdale, Pa.
Philips Electronics Inc., 750 S. Fulton Ave., Mt. Vernon, N. Y.
Philips Gloeilampenfabrieken, N. V., Eindhoven, Holland
Phillips Control Corp., 9 W. Washington St., Joliet, Ill.
Phillips-Drucker, Route 1, P. O. Box 507, Astoria, Ore.
Phoenix Precision Instrument Co., 3803-05 N. 5th St., Philadelphia, Pa.
Phoenix Steel Tube Div. of Phoenix Iron & Steel Co., Phoenixville, Pa.
Photo Research Corp., 837 N. Cahuenga Blvd., Hollywood 38, Calif.
Photobell Co. Inc., 43 Vesey St., New York 7, N. Y.
Photocon Research Products, 421 N. Altadena Drive, Pasadena, Calif.
Photovolt Corp., 95 Madison Ave., New York 16, N. Y.
Photron Instrument Co., 6516 Detroit Ave., Cleveland 2, Ohio
Physics Research Laboratories, P. O. Box 555, Hempstead, N. Y.
Pickey X-Ray Corp., 25 South Broadway, White Plains, N. Y.
Pilot Chemicals Inc., 36 Pleasant St., Watertown 72, Mass.
Pintsch Bamag AG, Postfach 11, Butzbach, Germany
Pioneer-Central Div., Bendix Aviation Corp., Fisher Bldg., Detroit 2, Mich.
Pioneer Rubber Co., Tiffin Rd., Willard, Ohio
Pioneer Service & Engineering Co., 231 S. LaSalle St., Chicago 4, Ill.
Pittsburgh Coke & Chemical, Protective Coatings Div., Grant Bldg., Pittsburgh 19, Pa.
Pittsburgh Des Moines Steel Co., Pittsburgh 25, Pa.
Pittsburgh Lectrodryer Div. of McGraw-Edison Co., 300 32nd St., Pittsburgh 30, Pa.
Pittsburgh Piping & Equipment Co., 158 49th St., Pittsburgh, Pa.
Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.
Planchets, Box 216, Chelsea, Mich.
Plastic Capacitors, Inc., 2620 N. Clybourn Ave., Chicago 14, Ill.
Plummer, Lawley & Co., 1022 Lancaster Ave., Rosemont, Pa.
Polarad Electronics Corp., 43-20 34th St., Long Island City 1, N. Y.
Pollak Corp., Joseph, 81 Freeport St., Boston 22 Mass.
Polymer Corp., The, Reading, Pa.
Polymer Industries, Inc., Springdale, Conn.
Polyphase Instrument Co., East 4th St., Bridgeport, Penna.
Potter Aeronautical Corp., Route 22, Union, N. J.

Potter & Brumfield, Inc., Princeton, Ind.
Powell Co., William, The, 2525 Spring Grove Ave., Cincinnati 22, Ohio
Power Designs, Inc., 89-25 130th St., Richmond Hill 18, N. Y.
Power Sources Inc., Burlington, Mass.
Powers Regulator Co., The, 3400 Oakton St., Skokie 81, Ill.
Pratt Co., Henry, 2222 S. Halsted St., Chicago 8, Ill.
Precision Apparatus Co., Inc., 70-31 84th St., Glendale 27, N. Y.
Precision Coating Co., Inc., 37 Franklin St., Needham Heights 94, Mass.
Precision Inc., 730 Lyndale Ave., N., Minneapolis, Minn.
Precision Methods & Machine Inc., Cumberland Drive, Waterbury, Conn.
Precision Radiation Instruments, Inc., 5810 S. Normandie, Los Angeles 44, Calif.
Preco Chemical Corp., 415 Lexington Ave., New York 17, N. Y.
Premier Metal Products Co., 337 Manida St., Bronx 59, N. Y.
Presin Co., 2014 Broadway, Santa Monica, Calif.
Price Electric Corp., Frederick, Md.
Process & Instruments, 15 Stone Ave., Brooklyn 33, N. Y.
Protectoseal Co., 1920 S. Western Ave., Chicago 8, Ill.
Pulverizing Machinery Co., 37 Chatham Rd., Summit, N. J.
Pulse Engineering, 2657 Spring St., Redwood City, Calif.
Purolator Products, Inc., 470 New Brunswick Ave Rahway, N. J.
Pyramid Screen Corp., 181 Harvard St., Brookline 46, Boston, Mass.
Pyro-Electric, Inc., 228 E. James St., Barrington, Ill.
Pyrofilm Resistor Co., U. S. Highway 46, Parsippany, N. J.
Pyrometer Instrument Co., Inc., Bergenfield, N. J.

Q

Q. E. D., Inc., 105 W. Adams St., Chicago, Ill.
Q. V. S., Inc., 20 N. 15th St., East Orange, N. J.
Quantum, Inc., Lufbery Ave., Wallingford, Conn.
Quartz Products Corp., 688 Somerse St., Plainfield, N. J.
Quartz & Silice, 8 rue d'Anjou, Paris, France
Quincy Compressor Co., Quincy, Ill.

R

RBM Div., Essex Wire Corp., 131 Godfrey, Logansport, Ind.
R-P & C Valve Div., American Chain & Cable Co., Inc., Reading, Pa.
RS Electronics Corp., 435 Portage Ave., Palo Alto, Calif.
Radiation Applications Inc., 370 Lexington Ave., New York 17, N Y.
Radiation Counter Labs., Inc., 5122 W. Grove St., Skokie, Ill.
Radiation Detection Co., 4047-49 Transport St., Palo Alto, Calif.
Radiation Dynamics Inc., Westbury Industrial Park, Westbury, N. Y.
Radiation Engineering Organization, 306 N. 92nd St., Omaha, Neb.
Radiation, Inc., P. O. Box 37, Melbourne, Fla.
Radiation Instrument Co., P. O. Box 733, Silver Spring, Md.
Radiation Instrument Development Lab, 5737 S. Halsted St., Chicago 21, Ill.
Radiation Research Corp., 1114 First Ave., New York, N. Y.
Radio City Products Co., Inc., Centre & Glendale Sts., Easton, Pa.
Radio Corporation of America, Industrial Electronic Products Div., Camden 2, N. J.
Radio Corporation of America, Tube Div., 415 S. Fifth St., Harrison, N. J.
Radio Frequency Labs., Inc., Boston 2, N. J.
Radiochemical Centre, The, Amersham, Buckinghamshire, England
Radiochemistry, Inc., 1111 W. St. Catherine St., Louisville 10, Ky.
Radiological Service Co., 244-02 Jamaica Ave., Bellerose 26, N. Y.
Radium Chemical Co., 161 E. 42nd St., New York 17, N. Y.
Rank Cintel Ltd., Worsley Bridge Rd., London, S. E. 26, England
Ransom Research, P. O. Box 269, San Pedro, Calif.
Rapid Electric Co., 2881 Middletown Rd., New York, N. Y.
Rascher & Betzold, Inc., 730 N. Franklin St., Chicago 10, Ill.
Rawson Electrical Instrument Co., 114 Potter St., Cambridge 42, Mass.
Ray-O-Vac Co., Madison, Wis.
Ray-Proof Corp., 843 Canal St., Stamford, Conn.
Raybestos-Manhattan, Inc., 75 E. Main St., Stratford, Conn.
Raypar Inc., 7800 W. Addison St., Chicago 34, Ill.
Raytheon Mfg. Co., Ceramic Sales Dept., Foundry Ave., Waltham 54, Mass.
Raytheon Mfg. Co., Industrial Tube Div., 55 Chapel St., Newton, Mass.
Raytheon Mfg. Co., Nuclear Power Group, 28 Seyon St., Waltham 54, Mass.
Raytheon Mfg. Co., Receiving Tube Div., 55 Chapel St., Newton 58, Mass.
Raytheon Mfg. Co., Semiconductor Div., 215 First Ave., Needham Heights, Mass.
Reactor Motors Div., Thiokol Chemical Corp., Denville, N. J.
Ready Made Sign Co., 115 Worth St., New York, N. Y.
Red Bank Div., Bendix Aviation Corp., Fisher Bldg., Detroit 2, Mich.
Redman Electronics Corp., P. O. Box 72, Thompsonville, Conn.
Redmond Co., Inc., Owosso, Mich.
Reeves Instrument Corp., Roosevelt Field, Garden City, N. Y.
Reichhold Chemicals, Inc., 525 N. Broadway, White Plains, N. Y.
Reilly Tar & Chemical Corp., 1615 Merchants Bank Bldg., Indianapolis 4, Ind.
Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio
Reliance, Inc., 1212 Adams Ave., Philadelphia 24, Pa.
Rem-Cru Titanium, Inc., Midland, Pa.
Remington Air Conditioning Div. of Remington Corp., Willey St., Auburn, N. Y.
Remington Rand Div. of Sperry Rand Corp., 315 Fourth Ave., New York 10, N. Y.
Remler Co., 2101 Bryant St., San Francisco 10, Calif.
Rempe Co., 334 N. Sacramento Blvd., Chicago 12, Ill.
Reon Resistor Corp., 117 Stanley Ave., Yonkers, N. Y.
Republic Aviation Corp., Farmingdale, N. Y.
Republic Rubber Div., Lee Rubber & Tire Corp., Youngstown, Ohio
Republic Steel Corp., 1441 Republic Bldg., Cleveland 1, Ohio
Resdel Corp., P. O. Box 217, Rio Grande, N. J.
Research Chemicals, Inc., Box 431, Burbank, Calif.
Research Development Manufacture, Inc., 429 E. Collum St., Philadelphia 44, Pa.
Research Equipment Co., 1032 College Ave, Wheaton, Ill.
Research Products Corp., 1015 E. Washington Ave., Madison, Wis.
Research Specialties Co., 200 S. Garrard Blvd., Richmond, Calif.
Research Vacuum Supply Co., 6712 N. Clark St., Chicago, Ill.
Resistance Products Co., 914 S. 13th St., Harrisburg, Pa.
Resistoflex Corp., Roseland, N. J.
Resitron Laboratories, Inc., 2908 Nebraska Ave., Santa Monica, Calif.
Reuter-Stokes Electronic Components, Inc., 2149 Hamilton Ave., Cleveland 14, Ohio
Revere Copper & Brass, Inc., 230 Park Ave., New York 17, N. Y.
Revere Corp. of America, Wallingford, Conn.
Rex Corp., The, Hayward Rd., West Acton, Mass.
Richardson Company, The, 2775 Lake St., Melrose Park, Ill.
Riggs Nucleonics Corp., 717 N. Victory Blvd., Burbank, Calif.
Riley Stoker Corp., 9 Neponset St., Worcester 8, Mass.
Rio Tinto Group, The, Barrington House, Lowe Lane, London, E.C.2, England
Risdon Manufacturing Co., The, Naugatuck, Conn.
Robbins Aviation, Inc., 2350 E. 38th St., Los Angeles 58, Calif.
Robbins & Myers, Inc., 1345 Lagonda Ave., Springfield, Ohio
Roberts Toledo Rubber Co., 4143 Monroe St., Toledo 13, Ohio
Robertshaw-Fulton Controls Co., Aeronautical & Instrument Div., Santa Ana Freeway at Euclid Ave., Anaheim, Calif.
Robertshaw-Fulton Controls Co., Fulton Syphon Div., P. O. Box 400, Knoxville 1, Tenn.
Robinson Clay Products Co., The, 65 W. State St., Akron 9, Ohio
Robinson Machine Works, Inc., 802 E. 8th St., New Albany, Ind.
Rockwell Co., W. S., 200 Eliot St., Fairfield, Conn.
Rohm & Haas Co., Washington Square, Philadelphia 5, Pa.
Roots-Connersville Blower Div., Dresser Industries, Inc., 9000 W. Mount St., Connersville, Ind.
Rosenberg Associates, Paul, 100 Stevens Ave., Mt. Vernon, N. Y.
Rotherm Engineering Co., Inc., 7280 W. Devon St., Chicago, Ill.
Rotron Manufacturing Co., 7 Schoonmaker Lane, Woodstock, N. Y.
Roy Co., Milton, 1300 E. Mermaid Lane, Philadelphia 18, Pa.
Royal McBee Corp., Port Chester, N. Y.
Rubber & Asbestos Corp., 225 Belleville Ave., Bloomfield, N. J.
Ruggles-Klingemann Mfg. Co., Salem, Mass.
Ruge Associates, Inc., Arthur C., 733 Concord Ave., Cambridge 38, Mass.
Rutherford Electronics Corp., 8944 Lindblade St., Culver City, Calif.
Ryerson & Son, Inc., Joseph T., P. O. Box 8000-A, Chicago, Ill.
Rytron Co., Inc., 7303 Lankershim Blvd., North Hollywood, Calif.

S

St. Eloi Corp., Box 507, Newtown Station, Cincinnati 44, Ohio
St. John X-Ray Laboratory, Califon, N. J.
Samples Machine Co., A. M., 2908 Tazewell Pike, Knoxville, Tenn.
Sanborn Co., Industrial Div., 175 Wyman St., Waltham 54, Mass.
Sanders Associates, Inc., 95 Canal St., Nashua, N. H.
Sandusky Foundry & Machine Co., W. Market St., Sandusky, Ohio
Sanford Miller Co., 691 Bedford Ave., Brooklyn 6, N. Y.
Sangamo Electric Co., Electronics Div., Springfield, Ill.
Sarco Co., Inc., 350 Fifth Ave., New York 1, N. Y.
Sargent & Lundy, 140 S. Dearborn St., Chicago 3, Ill.
Sarkes Tarzian, Inc., Rectifier Div., 415 N. College Ave., Bloomington, Ind.
Sauereisen Cements Co., Sauereisen Bldg., Pittsburgh 15, Pa.
Saxonburg Ceramics, Saxonburg, Pa.
Scan Instrument Corp., 1811 W. Irving Park Rd., Chicago, Ill.
Schaevitz Engineering, P. O. Box 505, Camden 1, N. J.
Schleicher & Schuell Co., Carl, Keene 8, N. H.
Schlumberger Well Survey Corp., Ridgefield, Conn.
Schultz Co., 503 N. Pine St., Indianapolis 2, Ind.
Schutte & Koerting Co., Cornwell Heights, Bucks County, Pa.
Schwarz Laboratories Inc., 230 Washington St., Mt. Vernon, N. Y.
Science Associates, Box 216, 194 Nassau St., Princeton, N. J.
Scientific Engineering Laboratory, 1510 6th St., Berkeley 10, Calif.
Scientific Equipment Co., Box 5686, Indianapolis 19, Ind.
Scintilla Division, Bendix Aviation Corp., Fisher Bldg., Detroit 2, Mich.
Scott, Inc., H. H., 111 Powdermill Road, Maynard, Mass.
Scovill Mfg. Co., Mills Div., 99 Mill St., Waterbury 20, Conn.
Sealol Corp., Warwick Industrial Park, Providence 5, R. I.
Sealtron Corp., Reading Rd. at Amity, Cincinnati 15, Ohio
Selas Corp. of America, Dresher, Pa.
Sequoia Wire & Cable Co., 2201 Bay Rd., Redwood City, Calif.
Serdex, Inc., 12 Bowdoin Square, Boston 14, Mass.
Servomechanisms, Inc., 12500 Aviation Blvd., Hawthorne, Calif.
Servo-Tek Products Co., 1086 Goffle Rd., Hawthorne, N. J.
Sethco Mfg. Co., 2293 Babylon Turnpike, Merrick, N. Y.
Shallcross Mfg. Co., Selma, N. C.
Shamban & Co., W. S., 11617 W. Jefferson Blvd., Culver City, Calif.
Shattuck Chemical Co., S. W., Denver, Colo.
Sheffield Corp., Bendix Aviation Corp., Fisher Bldg., Detroit 2, Mich.
Shell Chemical Corp., Chemical Sales Div., 380 Madison Ave., New York, N. Y.
Shell Oil Co., Lubricants Div., 50 W. 50th St., New York, N. Y.
Shieldalloy Corp., Newfield, N. J.
Shriver & Co., Inc., T., 864 Hamilton St., Harrison, N. J.
Shurite Meters, 35 Hamilton St., New Haven 8, Conn.
Sickles Div., F. W., General Instrument Corp., 165 Front St., Chicopee, Mass.
Sigma Instruments, Inc., 180 Pearl St., South Braintree, Boston 85, Mass.
Sigmamotor, Inc., 500 N. Main St., Middleport, N. Y.
Silicones Division, Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
Simmonds Aerocessories Inc., 105 White Plains Rd., Tarrytown, N. Y.
Simplex Valve & Meter Co., 7 E. Orange St., Lancaster, Pa.
Simoson Electric Co., Div. of American Gage & Machine Co., 5208 W. Kinzie St., Chicago 44, Ill.
Single Crystal Corp. of America, RD1, Saxonburg Blvd., Saxonburg, Pa.
Sintercast Corp. of America, 134 Woodworth Ave., Yonkers, N. Y.
Skinner Electric Valve Div., The Skinner Chuck Co., New Britain, Conn.
Small Motors, Inc., 2076 Elston Ave., Chicago 14, Ill.
Smith Co., S. Morgan, York, Pa.
Smith Corp., A. O., 3533 N. 27th St., Milwaukee 1, Wis.
Smith Tube Corp., Ridgewood, N. J.
Snell, Inc., Foster D., 29 W. 25th St., New York 11, N. Y.
Societe D'Applications Industrielles de la Physique (S.A.I.P.), 146, Bd. de Charonne, Paris, France
Sola Electric Co., 4633 W. 16th St., Chicago 50, Ill.
Solar Aircraft Co., 2200 Pacific Highway, San Diego 12, Calif.
Sonneborn Sons, Inc., L., 404 Fourth Ave., New York 16, N. Y.
Sorensen & Co., Inc., Richards Ave., South Norwalk, Conn.
Southwestern Industrial Electronics Co., 2831 Post Oak Rd., P. O. Box 13058, Houston 19, Texas
Sparkler Mfg. Co., Mundelein, Ill.
Sparta Mfg. Co., Div. of U. S. Ceramic Tile Co., Dover, Ohio
Spaulding Fibre Co., Inc., 310 Wheeler St., Tonawanda, N. Y.

NUCLEAR AND ALLIED PRODUCTS

Special Screw Products Co., Bedford, Ohio
Specialty Engineering & Electronics Co., 79 Clifton Place, Brooklyn 38, N. Y.
Spectrol Electronics Corp., 1704 S. Del Mar Ave., San Gabriel, Calif.
Speedline Stainless Steel Fittings Div. of Horace T. Potts Co., Erie Ave. & D St., Philadelphia 34, Pa.
Speer Carbon Co., St. Marys, Pa.
Spellman High Voltage Co., 3029 Webster Ave., Bronx 67, N. Y.
Spencer-Kennedy Labs., Inc., 1320 Soldiers Field Rd., Boston 35, Mass.
Sperry & Co., D. R., Batavia, Ill.
Sperry Gyroscope Div. of Sperry-Rand Corp., Great Neck, N. Y.
Sperry Products, Inc., Danbury, Conn.
Spincraft, Inc., 4158H W. State St., Milwaukee 8, Wis.
Sprague Electric Co., North Adams, Mass.
Squires Co., C. E., 18805 Syracuse Ave., Cleveland 10, Ohio
Stackpole Carbon Co., St. Marys, Pa.
Stanat Mfg. Co., Inc., 511 Shames Drive, Westbury, N. Y.
Standard Electronics Div. of Radio Engineering Labs., Inc., 29-01 Borden Ave., Long Island City 1, N. Y.
Standard Pressed Steel Co., Box 1033, Jenkintown, Pa.
Standard Railway Equipment Mfg. Co., 200 S. Michigan Ave., Chicago 4, Ill.
Standard Safety Equipment, 431 N. Quentin Rd., Palatine, Ill.
Standard Scientific Supply Corp., 808 Broadway, New York 3, N. Y.
Stanton Instruments, Ltd., 119 Oxford St., London, W. 1, England
Staplex Co., The, Air Sampler Div., 783 Fifth Ave., Brooklyn 32, N. Y.
Star Porcelain Co., The, P. O. Box 1329, Trenton 9, N. J.
Statham Instruments, Inc., 12401 W. Olympic Blvd., Los Angeles 64, Calif.
Stearns-Roger Mfg. Co., 660 Bannock St., P. O. Box 5370, Denver 17, Colo.
Steel & Alloy Tank Co., 1 Bessemer St., Newark 5, N. J.
Steiner-Ives Co., Springfield Rd., Union, N. J.
Stephen & Co., Ltd., R. A., 120-126 Lavender Ave., Mitcham, Surrey, England
Sterling Mfg. Co., 7201 Wentworth Ave., Cleveland 2, Ohio
Sterling Transformer Corp., 297 N. Seventh St., Brooklyn 11, N. Y.
Stevens-Arnold, Inc., 7 Elkins St., Boston, Mass.
Stevens Mfg. Co., Inc., P. O. Annex 1007, Mansfield, Ohio
Steward Mfg. Co., D. M., E. 36th St., Chattanooga 1, Tenn.
Stewart Corp., F. W., 4311-13 Ravenswood Ave., Chicago 13, Ill.
Stewart Engineering Co., P. O. Box 277, Soquel, Calif.
Sticht Co., Inc., Herman N., 27 Park Place, New York 7, N. Y.
Stillman Rubber Co., 9811 Marlyn Ave., Culver City, Calif.
Stoelting Co., C. H., 424 N. Homan Ave., Chicago 24, Ill.
Stokes Corp., F. J., 5500 Tabor Rd., Philadelphia 20, Pa.
Stone & Webster Engineering Corp., 90 Broad St., New York 5, N. Y.
Stonhard Co., Inc., 1306 Spring Garden St., Philadelphia 23, Pa.
Stonite Coil Co., Route 25, Yardville, N. J.
Stow Mfg. Co., 355 Shear St., Binghamton, N. Y.
Streed Products Corp., P. O. Box 447, Gadsden, Ala.
Streeter-Amet Co., Grayslake, Ill.
Stromberg-Carlson Div., General Dynamics Corp., 1400 N. Goodman St., Rochester 9, N. Y.
Struthers-Dunn, Inc., Lambs Rd., Pitman, N. J.
Struthers-Wells Corp., Warren, Pa.
Sturtevant Mill Co., Park & Clayton Sts., Boston 22, Mass.
Sun Shipbuilding & Dry Dock Co., Chester, Pa.
Sunstrand-Turbo Div. of Sunstrand Machine Tool, Pacoima, Calif.
Sunvic Controls Ltd., 10 Essex St., Strand, London, W. C. 2, England
Superior Electric Co., 83 Laurel St., Bristol, Conn.
Superior Steel Div. of Copperweld Steel Co., Carnegie, Pa.
Superior Tube Co., Box 191, Norristown, Pa.
Surety Rubber Co., N. High St., Carrollton, Ohio
Surface Combustion Corp., 2375 Dorr St., Toledo 1, Ohio
Swartwout Co., 18511 Euclid Ave., Cleveland 12, Ohio
Swepco Tube Corp., 1 Clifton Blvd., Clifton, N. J.
Sylvania-Corning Nuclear Corp., 208-20 Willetts Point Blvd., Bayside, N. Y.
Sylvania Electric Products, Inc., 1740 Broadway, New York 19, N. Y.
Sylvania Electric Products Inc., Chemical & Metallurgical Div., Towanda, Pa.
Sylvania Electric Products Inc., Parts Div., Warren, Pa.
Sylvania Electric Products Inc., Semiconductor Div., Woburn, Mass.
Sylvania Electronic Systems Div. of Sylvania Electric Products Inc., 100 First Ave., Waltham 54, Mass.
Sylvania Electronic Tubes, a Div. of Sylvania Electric Products Inc., Emporium, Pa.
Syncor Products, 30 Eastern Ave., Malden 48, Mass.
Synthane Corp., River Road, Oaks, Pa.
Syntron Co., 355 Lexington Ave., Homer City, Pa.

T

T. I. Nuclear Engineering Ltd., The Adelphi, London, W. C. 2, England
Taller & Cooper Inc., 75 Front St., Brooklyn, N. Y.
Tammen & Denison, Inc., 4751 N. Olcott NB, Chicago 31, Ill.
Tansitor Electronics Inc., West Road, Bennington, Vt.
Taylor Forge & Pipe Works, Inc., 4735 W. 14th St., Chicago 90, Ill.
Taylor Woodrow Construction Ltd., Ruisup Rd., Southall, Middlesex, Great Britain
Tech Laboratories, Inc., Bergen & Edsall Blvds., Palisades Park, N. J.
Technical Associates, 140 W. Providencia Ave., Burbank, Calif.
Technical Measurement Corp., 441 Washington Ave., North Haven, Conn.
Technical Operations, Inc., South Ave., Burlington, Mass.
Technical Ply-Woods, 6756 Cranden Ave., Chicago 49, Ill.
Technical Research Group, Inc., 2 Aerial Way, Syosset, N. Y.
Technical Service Corp., 1404 W. Market St., Louisville 3, Ky.
Technicraft Labs., Inc., Thomaston-Waterbury Rd., Thomaston, Conn.
Technique Associates, Inc., 1413 Cornell Ave., Indianapolis, Ind.
Techniques, Inc., P. O. Box 85, Hackensack, N. J.
Technitrol Engineering Corp., Emerald St. & Allegheny Ave., Philadelphia 34, Pa.
Tektronix, Inc., P. O. Box 831, Portland 7, Ore.
Telechrome Mfg. Corp., 28 Ranick Drive, Amityville, N. Y.
Telecomputing Corp., 915 N. Citrus Ave., Los Angeles 38, Calif.
Telectro Industries Corp., 35-16 37th St., Long Island City 1, N. Y.
Tele-Dynamics, Inc., 5000 Parkside Ave., Philadelphia 3, Pa.
Teleflex, Inc., North Wales, Pa.
Teletronics Laboratory, Inc., 54 Kinkel St., Westbury, N. Y.
Teleweld Inc., 11535 Franklin St., Franklin Park, Ill.
Tel-Instrument Electronics Corp., 728 Garden St., Carlstadt, N. J.
Telonic Industries, 73 N. 2nd Ave., Beech Grove, Ind.
Temperature Engineering Corp., 1200 Union Landing Rd., Riverton, N. J.
Ten Bosch, Inc., M., 80 Wheeler Ave., Pleasantville, N. Y.
Tenney Engineering, Inc., 1090 Springfield Rd., Union, N. J.
Tenso-Lab Inc., South Buckout St., Irvington-on-Hudson, N. Y.
Terado Co., 1068 Raymond Ave., St. Paul 8, Minn.
Texas Instruments Incorporated, 6000 Lemmon Ave., Dallas 9, Texas
Texas Nuclear Corp., Box 9267, Allandale Station, Austin 17, Texas
Texas Research Foundation, Renner, Texas
Ther Electric & Machine Works, 15 S. Jefferson St., Chicago 6, Ill.
Thermal American Fused Quartz Co., 18-20 Salem St., Dover, N. J.
Thermal Refractories Corp., 4501 Dell Ave., North Bergen, N. J.
Thermo Electric Co., Inc., Saddle Brook, N. J.
Thermo Electric Mfg. Co., 465 Huff St., Dubuque, Iowa
Thermo Materials Inc., 4040 Campbell Ave., Menlo Park, Ill.
Thomas Co., Arthur H. Vine St. at Third, Box 779, Philadelphia 5, Pa.
Thomas Instrument Co., Phoenix, N. Y.
Thompson Fiber Glass Co., H. I., 1733 Cordova St., Los Angeles 7, Calif.
Thompson Products, Inc., Staff Research & Development New Devices Dept., 7209 Platt Ave., Cleveland 4, Ohio
Thompson Products, Inc., Tapco Group, Nuclear Products Dept., 23555 Euclid Ave., Cleveland 17, Ohio
Thompson-Ramo-Wooldridge Co., The, P. O. Box 45067, Airport Station, Los Angeles 45, Calif.
Thordarson-Meissner Mfg. Div., Mt. Carmel, Ill.
Tickle Engineering Works, Inc., Arthur, 30 Delevan St., Brooklyn 31, N. Y.
Tinsley Laboratories, Inc., 2526 Grove St., Berkeley 4, Calif.
Titanium Metals Corp. of America, 233 Broadway, New York 7, N. Y.
Titanium Zirconium Co., Inc., Flemington, N. J.
Titeflex, Inc., Hendee St., Springfield 4, Mass.
Tobe Deutschmann Corp., Providence Highway, Norwood, Mass.
Torit Mfg. Co., Walnut & Exchange St., St. Paul, Minn.
Tork Time Controls, Inc., 60 MacQuesten Parkway, Mt. Vernon, N. Y.
Toronto Fire Brick Co., Stratton, Ohio
Torsion Balance Co., 35 Monhegan St., Clifton, N. J.
Torwico Electronics, Inc., 1090 Morris Ave., Union, N. J.
Towers & Co., Ltd., J. W., Widnes, Lancs., England
Townson & Mercer, Ltd., Croydon, Surrey, England
Traceriab, Inc., 1601 Trapelo Rd., Waltham 54, Mass.
Trane Company, The, La Crosse, Wis.
Transformers, Inc., 200 Stage Rd., Vestal, N. Y.
Transitron Electronics Corp., 168 Albion St., Wakefield, Mass.
Transonic, Inc., 808 Sixteenth St., Box 59, Bakersfield, Calif.
Trans-Sonics, Inc., P. O. Box 328, Lexington 73, Mass.
Treadwell Co., Midland, Pa.
Tresco, Inc., 3824 Terrace St., Philadelphia 28, Pa.
Triad Transformer Corp., 4055 Redwood Ave., Venice, Calif.
Trimount Instrument Co., 3119 W. Lake St., Chicago 12, Ill.
Trinity Equipment Corp., P. O. Box 1172, Cortland, N. Y.
Trio Laboratories, Inc., Plainview, N. Y.
Trio Machine Works, Inc., 3045 N. 3rd St., Philadelphia 33, Pa.
Trion, Inc., 1000 Island Ave., McKees Rocks, Pa.
Triplett Electrical Instrument Co., 286 Harmon Rd., Bluffton, Ohio
Tri-R Instruments, 144-13 Jamaica Ave., Jamaica 35, N. Y.
Tronex, Inc., 10th & G Sts., Millville, N. J.
Trop-Artic, Inc., 3000 S. Hackley St., Muncie, Ind.
Trott Electronics, Inc., 412 Smith St., Rochester 6, N. Y.
Tube Methods, Inc., Bridgeport, Pa.
Tube Reducing Corp., 520 Main Ave., Wallington, N. J.
Tube Turns Div. of Chemetron Corp., 224 E. Broadway, Louisville 1, Ky.
Tube Turns Plastics, Inc., An Affiliate of Chemetron Corp., 2929 Magazine St., Louisville 11, Ky.
Tullamore Electronics Laboratory, 6055 S. Ashland Ave., Chicago 36, Ill.
Tung-Sol Electric, Inc., 95 Eighth Ave., Newark 4, N. J.
Turbine Equipment Co., Hynes Electric Heating Div., Box 578, Westfield, N. J.
Turco Products, Inc., 6135 S. Central Ave., Los Angeles 1, Calif.
Twentieth Century Electronics Ltd., Centronics Works, King Henry's Drive, New Addington, Surrey, England

U

U B S Chemical Corp., 491 Main St., Cambridge 42, Mass.
U. M. & F. Mfg. Corp., 10929 Vanowen St., North Hollywood, Calif.
U. S. I. Technical Center, Div. of U. S. Industries, Inc., 3901 N.E. 12th Ave., Pompano Beach, Fla.
Ulanet Co., George, 413 Market St., Newark 5, N. J.
Ultradyne Engineering Labs., Inc., P. O. Box 8007, Albuquerque, N. M.
Unimax Switch Div. of The W. L. Maxson Corp., Ives Rd., Wallingford, Conn.
Union Carbide Chemicals Co., Div. of Union Carbide Corp., 30 E. 42nd St., New York 17, N. Y.
Union Elect-Sonics Corp., 111 Penn St., Quincy 69, Mass.
Union Steam Pump Co., Battle Creek, Mich.
Unit Process Assemblies, 61 E. 4th St., New York 3, N. Y.
United Aircraft Products, Inc., 1116 Bolander St., Dayton, Ohio
United Carbon Products Co., Inc., P. O. Box 269, Bay City, Mich.
United Engineers & Constructors, Inc., 1401 Arch St., Philadelphia 5, Pa.
United Mfg. Co., Div. of W. L. Maxson Corp., 41 Hall St., Hamden 14, Conn.
United Materials & Richmond Brick Co., Ltd., Pt. Richmond, Calif.
United Pressed Products Co., 900 S. Desplaines St., Chicago 7, Ill.
United Shoe Machinery Corp., Atomic Power Dept., Research Div., Balch St., Beverly, Mass.
U. S. Borax & Chemical Corp., Pacific Coast Borax Co., Div., 50 Rockefeller Plaza, New York 20, N. Y.
U. S. Gasket Co., Plastics Div. of The Garlock Packing Co., 600 N. 10th St., Camden 1, N. J.
United States Graphite Co., The, Div. of The Wickes Corp., Holland Ave., Saginaw 5, Mich.
U. S. Industrial Chemicals Co., Div. of National Distillers & Chemical Corp., 99 Park Ave., New York 16, N. Y.
U. S. Pipe & Foundry Co., Steel & Tubes Div., Burlington, N. J.
United States Radium Corp., P. O. Box 246, Morristown, N. J.
United States Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa.
U. S. Stoneware Co., Akron 9, Ohio
United States Testing Co., Inc., 1415 Park Ave., Hoboken, N. J.
United Transformer Corp., 150 Varick St., New York 13, N. Y.
Unitron Instrument, A Div. of United Scientific Co., 204-206 Milk St., Boston 9, Mass.
Universal Atomics, Div. of Universal Transistor Products Corp., 17 Brooklyn Ave., Westbury, N. Y.
Universal Industrial Equipment Co., 1625 Paterson Plank Rd., Secaucus, N. J.
Utrad, Inc., 305 N. Briant St., Huntington, Ind.

V

Vacuum Equipment Div. of The New York Air Brake Co., 1325 Admiral Wilson Blvd., Camden 11, N. J.
Vacuum Industrial Applications, Ltd., Netherton Rd., Wishaw, Lanarkshire, Scotland

Vacuum Specialties Co., Inc., 34 Linden St., Somerville, Mass.
Vacuum Tube Products Co., Inc., 2020 Short St., Oceanside, Calif.
Valcor Engineering Corp., 333 Carnegie Ave., Kenilworth, N. J.
Vanadium Corp. of America, Graybar Bldg., 420 Lexington Ave., New York 17, N. Y.
Vanton Pump & Equipment Corp., 201 Sweetland Ave., Hillside, N. J.
Vard, Inc., 2981 E. Colorado St., Pasadena 8, Calif.
Varian Associates, 611 Hansen Way, Palo Alto, Calif.
Vari-L Co., Inc., P. O. Box 1433, Stamford, Conn.
Varniton Co., 416 N. Varney St., Burbank, Calif.
Varo Mfg. Co., Inc., 2201 Walnut St., Garland, Texas
Vector Electronic Co., 1100 Flower St., Glendale 1, Calif.
Veeco Vacuum Corp., 86 Denton Ave., New Hyde Park, N. Y.
Veeder-Root, Inc., 70 Sargeant St., Hartford 2, Conn.
Velan Valve Corp., 37 S. River St., Plattsburgh, N. Y.
Ver-Lac-Oid Chemical Co., 116 Broad St., New York 4, N. Y.
Vic-Dar Div., Victor Adding Machine Co., 3900 N. Rockwell St., Chicago 18, Ill.
Vickers, Inc., Electric Products Div., 1840 Locust St., St. Louis 3, Mo.
Vickers, Inc., Div. of Sperry-Rand Corp., Marine & Ordnance Dept., Waterbury 20, Conn.
Vickery Co., The, 610 Sixteenth St., Oakland 12, Calif.
Victor Chemical Works, 155 N. Wacker Drive, Chicago, Ill.
Victoreen Instrument Co., 5800-11 Hough Ave., Cleveland 3, Ohio
Victory Engineering Corp., 77 Springfield Rd., Union N. J.
Videon Electronic Corp., 902 E. Michigan St., Indianapolis 2, Ind.
Viener & Sons, Hyman, 5300 Hatcher St., Dept. NU, Richmond 5, Va.
Viking Pump Co., Fourth & State St., Cedar Falls, Iowa
Vitro Corp. of America, 261 Madison Ave., New York, N. Y.
Vitro Engineering Co., Div. of Vitro Corp. of America, 225 Fourth Ave., New York 3, N. Y.
Vogt Machine Co., Henry, 1000 W. Ormsby St., Louisville, Ky.
Volk Radiochemical Co., 5412 N. Clark St., Chicago 40, Ill.
Vorac Co., 147 Meadow Rd., Rutherford, N. J.
Vulcan Electric Co., 88 Holten St., Danvers, Mass.

W

Wagner Electric Co., 6400 Plymouth Ave., St. Louis 14, Mo.
Wah Chang Corp., 233 Broadway, New York 7, N. Y.
Wakefield Industries, Inc., 5107 W. Grove St., Skokie, Ill.
Waldorf Instrument Co., Div. of F. C. Huyck Co., Wolf Hill Rd., Huntington Station, N. Y.
Walker Trucking Co., P. O. Box 2, New Britain, Conn.
Walkirt Co., The, 141 W. Hazel St., Inglewood 3, Calif.
Wall Tube & Metal Products Co., P. O. Box 330, Newport, Tenn.
Wallace & Tiernan Inc., 25 Main St., Belleville 9, N. J.
Wallin Associates, 18760 Ventura Blvd., Suite 1, Tarzana, Calif.
Wallingford Steel Co., 80 Valley St., Wallingford, Conn.
Waltham Electronics Corp., 751 Main St., Waltham, Mass.
Walworth Co., 750 Third Ave., New York 17, N. Y.
Wang Laboratories, Inc., 37 Hurley St., Cambridge 41, Mass.
Ward Leonard Electric Co., 621 South St., Mt. Vernon, N. Y.
Warner Electric Brake & Clutch Co., Beloit, Wis.
Warren Corp., The, 2901 Brighton Rd., Pittsburgh 12, Pa.
Warren Pumps, Inc., Warren, Mass.
Washington Steel Corp., 60 S. Woodland Ave., Washington, Pa.
Waterbury Farrell Foundry & Machine Co., 453 Bank St., Waterbury 20, Conn.
Waterman Products Co., Inc., 2445-63 Emerald St., Philadelphia 25, Pa.
Waters Manufacturing, Inc., Boston Post Rd., Wayland, Mass.
Watlow Electric Mfg. Co., 1376 Ferguson Ave., St. Louis 14, Mo.
Watson Mfg. Co., Inc., 4800 Taylor St., Jamestown, N. Y.
Watts Regulator Co., 10 Embankment St., Lawrence, Mass.
Waugh Engineering Co., 7842 Burnet Ave., Van Nuys, Calif.
Wave Particle Corp., P. O. Box 252, Menlo Park, Calif.
Waveforms, Inc., 333 Sixth Ave., New York 14, N. Y.
Wayne Kerr Corp., P. O. Box 801, Philadelphia 5, Pa.
Weatherhead Co., The, 128 W. Washington Blvd., Fort Wayne, Ind.
Webber Mfg. Co., Inc., P. O. Box 217, Indianapolis 6, Ind.
Weksler Instruments Corp., 195 E. Merrick Rd., Freeport, N. Y.
Weldmatic Div. of Unitek Corp., 380 N. Halsted Ave., Pasadena, Calif.
Weltronic Co., 19500 W. Eight Mile Rd., Detroit 41, Mich.
Westberg Mfg. Co., 144 S. Coombs St., Napa, Calif.
West Instrument Corp., 4363 W. Montrose Ave., Chicago 41, Ill.
Western Gear Corp., P. O. Box 182, Lynwood, Calif.
Western Gold & Platinum Co., 525 Harbor Blvd., Belmont, Calif.
Western Radiation Lab., 1107 W. 24th St., Los Angeles 7, Calif.
Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.
Westinghouse Electric Corp., Atomic Equipment Dept., Cheswick, Pa.
Westinghouse Electric Corp., Electronic Tube Div., Box 284, Elmira, N. Y.
Westinghouse Electric Corp., X-Ray Div., 2519 Wilkens Ave., Baltimore 3, Md.
Weston Instruments, Div. of Daystrom, Inc., 614 Frelinghuysen Ave., Newark 12, N. J.
Westronics, Inc., 3605 McCart St., Fort Worth, Texas
Wheeler Electronic Corp., Sub. of Sperry Rand Corp., 150 E. Aurora St., Waterbury 20, Conn.
Wheeler Mfg. Co., C. H., 19th & Lehigh Sts., Philadelphia 32, Pa.
Wheelock Signals, Inc., 273 Branchport Ave., Long Branch, N. J.
White Dental Mfg. Co., S. S., 10 E. 40th St., New York 16, N. Y.
White Engineering Corp., J. G., The, 80 Broad St., New York 4, N. Y.
Whitehead & Hoag Co., The, 108 First St., Newark 1, N. J.
Wiegand Co., Edwin L., 7895 Thomas Blvd., Pittsburgh 8, Pa.
Will Corporation, Wilco Place, Box 1050, Rochester 3, N. Y.
Willamette Iron & Steel Co., 2800 N. W. Front Ave., Portland 10, Ore.
Wilson & Co., G. C., 1915 Eighth Ave., Huntington, W. Va.
Winchester Electronics, Inc., Willard Road, Norwalk, Conn.
Winslow Co., Inc., 705 Lehigh Ave., P. O. Box 394, Union, N. J.
Wisconsin Stainless Foundry & Machine Corp., 823 E. St. Paul Ave., Waukesha, Wis.
Witt Cornice Co., The, 4454 Steel Place, Cincinnati 9, Ohio
Wolverine Tube Div. of Calumet & Hecla, Inc., 17200 Southfield Rd., Allen Park, Mich.
Wood & Co., Charles S., 88 Main St., West Orange, N. J.
Wood Counter Laboratory, N., 1525 E. 53rd St., Chicago 15, Ill.
Worcester Valve Co., Inc., 16 Parker St., Worcester, Mass.
Worklon, Inc., 253 W. 28th St., New York 1, N. Y.
Worner Electronic Devices, Rankin, Ill.
Worthington Corp., Harrison, N. J.
Wright Hoist Div., American Chain & Cable Co., Inc., 735 Hay St., York, Pa.

X

X-Ray Dept. of General Electric Co., 4855 Electric Ave., Milwaukee, Wis.
X-Ray Monitoring Corp., 1947 Broadway, New York 23, N. Y.

Y

Yardney Electric Corp., 40 Leonard St., New York 13, N. Y.
Yarnall-Waring Co., Chestnut Hill, Philadelphia 18, Pa.
Yellow Springs Instrument Co., Inc., P. O. Box 106, Yellow Springs, Ohio
Yerzley & Co., 744 Broad St., Newark 2, N. J.
Yonkers Industrial Plastic Products Co., 137 Sawmill River Rd., Yonkers, N. Y.
York Corp., York, Pa.
Young Radiator Co., 709 S. Marquette St., Racine, Wis.
Yuba Consolidated Industries, Inc., 351 California St., San Francisco 4, Calif.

Z

Zallea Brothers, 800 Locust St., Wilmington, Del.
Zenith Optical Lab., 1940 Great Neck Rd., Copiague, N. Y.
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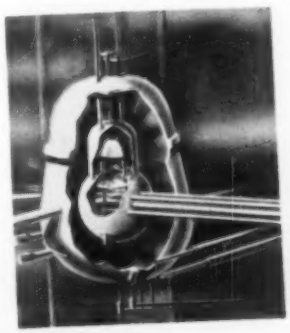

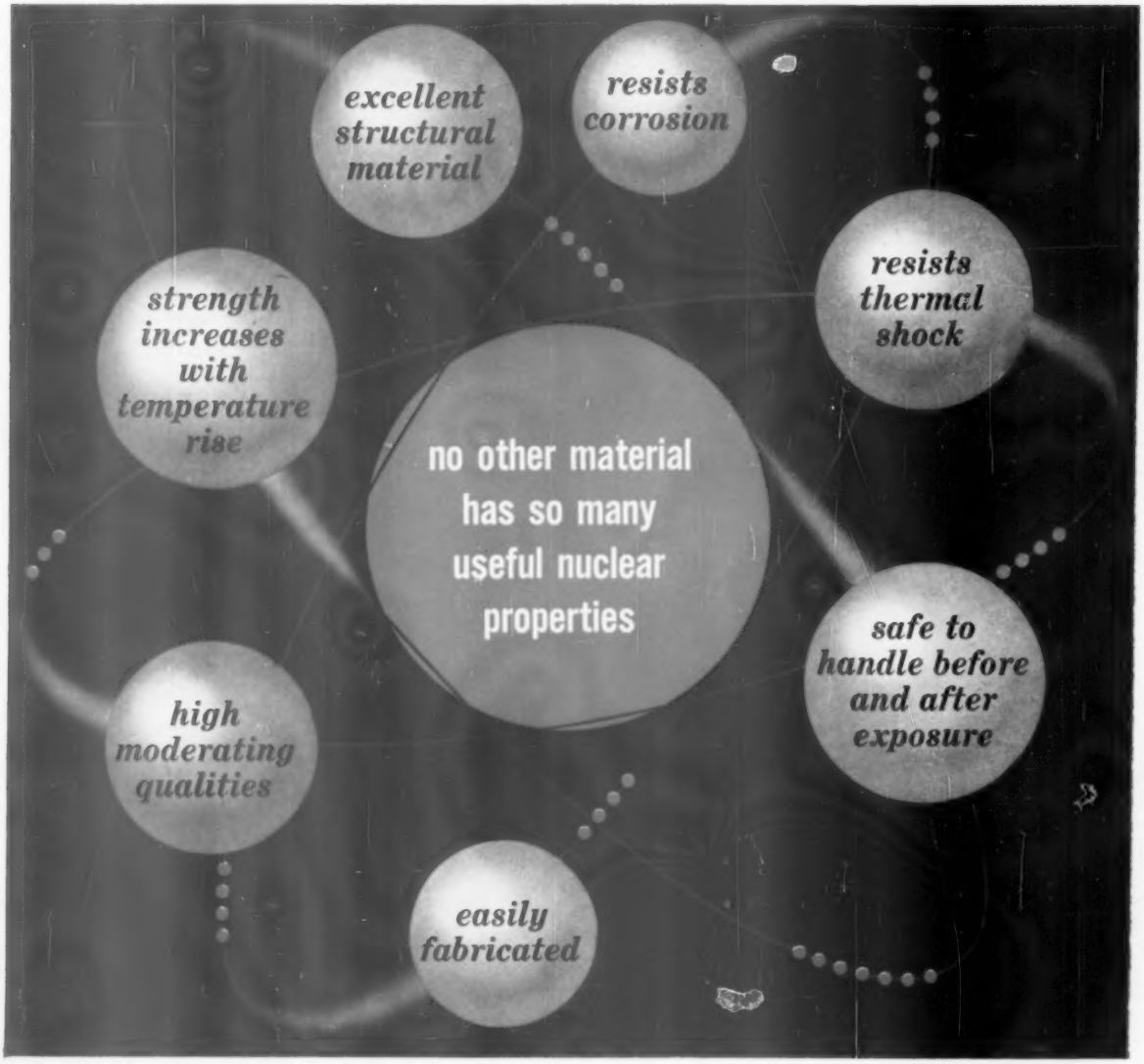
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